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No 534.

FIRST LINES

OF THE

PRACTICE OF PHYSIC,

BY

WILLIAM CULLEN, M. D.

LATE PROFESSOR OF THE PRACTICE OF PHYSIC IN THE
UNIVERSITY OF EDINBURGH,
&c. &c. &c.

INCLUDING

THE DEFINITIONS OF THE NOSOLOGY;

WITH

SUPPLEMENTARY NOTES,

CHIEFLY SELECTED FROM RECENT AUTHORS, WHO HAVE
CONTRIBUTED TO THE IMPROVEMENT OF MEDICINE,

BY

PETER REID, M. D.

IN TWO VOLUMES.

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[*] Though I have thought it proper to divide this book into sections, I think it necessary, for the convenience of references, to number the chapters from the beginning.

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FIRST LINES

OF THE

PRACTICE OF PHYSIC.

PART II.

OF NEUROSES, OR NERVOUS DISEASES.

Cl. II. NEUROSES.

Sensus et motus læsi, sine pyrexia idiopathica, et sine morbo locali.

INTRODUCTION.

1090. In a certain view, almost the whole of the diseases of the human body might be called Nervous: but there would be no use for such a general appellation; and, on the other hand, it seems improper to limit the term, in the loose inaccurate manner in which it has been hitherto applied, to hysteric and hypochondriacal disorders, which are themselves hardly to be defined with sufficient precision.

1091. In this place I propose to comprehend, under the title of Neuroses, all those preternatural affections of sense or motion, which are without pyrexia as a part of the primary disease; and all those which do not depend upon a topical affection of the organs, but upon a more general affection of the nervous system, and of those powers of the system upon which sense and motion more especially depend.

1092. Of such diseases I have established a class, under the title of NEUROSES, or NERVOUS DISEASES. These I again distinguish, as they consist, either in the interruption and debility of the powers of sense and motion, or in the irregularity with which these powers are exercised; and have accordingly arranged them under the four orders of *Comata*, *Adynamiæ*, *Spasmi*, and *Vesaniæ*, to be defined as we proceed to treat of them more particularly.

BOOK I.

OF COMATA, OR OF THE LOSS OF VOLUNTARY MOTION.

ORD. I. COMATA:

Motus voluntarii imminuti, cum sopore sive sensuum feriatione.

1093. UNDER this title are comprehended those affections which have been commonly called the Soporose diseases; but they are most properly distinguished by their consisting in some interruption or suppression of the powers of sense and voluntary motion, or of what are called the animal functions. These are indeed usually suspended in the time of natural sleep: but of all the diseases to be comprehended under our title, sleep, or even the appearance of it, is not constantly a symptom. Of such diseases I can mark and properly explain two genera only, which come under the titles of *Apoplexy* and *Palsy*.

CHAP. I.

OF APOPLEXY.

G. XLI. Apoplexia.—*Motus voluntarii fere omnes imminuti, cum sopore plus minus profundo, superstite motu cordis et arteriarum.*

Sp. 1. *Apoplexia (sanguinea) cum signis plethoræ universalis, et præcipue capitis.*

Sp. 2. *Apoplexia (serosa) in corpore, plerumque senum, leucophlegmatico.*

Sp. 3. *Apoplexia (hydrocephalica) paulatim adoriens; infantes et impuberes, primum lassitudine, febricula, et dolore capitis, dein pulsu tardiore, pupillæ dilatatione, et somnolentia afficiens.*

Sp. 4. *Apoplexia (atrabilaria) in corpore melancholico.*

Sp. 5. *Apoplexia (traumatica) a vi externa mechanica, capiti illata.*

Sp. 6. *Apoplexia (venenata) a potentiis sedantibus interne vel externe adhibitis.*

Sp. 7. *Apoplexia (mentalis) a pathemate mentis.*

Sp. 8. *Apoplexia (cataleptica) musculis, sub artuum a vi externa motu, contractilibus.*

Sp. 9. *Apoplexia (suffocata) a potentia externa suffocante.*

1094. Apoplexy is that disease in which the whole of the external and internal senses, and the whole of the voluntary motions, are in some degree abolished; while respiration and the action of the heart continue to be performed. By its being an affection of the *whole* of the powers of sense and of voluntary motion, we distinguish it from *Palsy*; and by its being with the continuance of respiration and the action of the heart, it is distinguished from *Syncope*. I have further added to the ordinary definition of apoplexy, that the abolition of the powers of sense and motion is in *some degree* only; meaning by this to imply, that, under the title of Apoplexy, are here comprehended those diseases which, as differing from it in degree only, cannot, with a view either to pathology or practice, be properly distinguished from it. Such are the diseases sometimes treated of under the names of *Carus*, *Cataphora*, *Coma*, and *Lethargus*.

1095. Apoplexy, in all its different degrees, most commonly affects persons advanced in life, and especially those above sixty years of age. It most usually affects persons of large heads and short necks, persons of a corpulent habit, persons who have passed an indolent life and used a full diet, and especially those who have indulged in frequent intoxication. Men who have long laboured under a frequent and copious discharge of blood from the hæmorrhoidal vessels, upon either the suppression or spontaneous ceasing of that discharge, are particularly liable to be affected with apoplexy.

1096. This disease frequently comes on very suddenly: but in many cases it is preceded by various symptoms, such as frequent fits of giddiness, frequent headachs, a hæmorrhagy from the nose, some transitory interruptions of seeing and hearing, some false vision and hearing, some transitory degree of numbness or loss of motion in the extremities, some faltering of the tongue in speaking, a loss of memory, a frequent drowsiness, and frequent fits of incubus.

1097. An attention to these symptoms, and to the predisponent circumstances (1095.), will often enable us to foresee the more violent attacks of this disease.

1098. When the disease comes on suddenly to a considerable degree, it has been frequently observed to have been immediately induced by violent exercise; by a full and long-continued inspiration; by a fit of anger; by much external heat, especially that arising from a crowded assembly of people; by warm bathing; by intoxication; by long stooping with the head down;

and by a tight ligature about the neck. The disease has been remarked to make its attacks most frequently in the spring season, and especially when the vernal heat suddenly succeeds to the winter cold.

1099. The symptoms denoting the presence of this disease will be sufficiently known from the definition given 1094. Although the whole of the body is affected with the loss of sense and motion, it sometimes takes place more upon one side of the body than the other; and, in that case, the side least affected with palsy is sometimes affected with convulsions. In this disease there is often a stertorous breathing; and this has been said to be a mark of the most violent state of the disease: but it is not always present even in the most complete form or most violent degree of the disease.

1100. The proximate cause of this disease may be, in general, whatever interrupts the motion of the nervous power from the brain to the muscles of voluntary motion; or, in so far as sense is affected, whatever interrupts the motion of the nervous power from the sentient extremities of the nerves to the brain.

1101. Such an interruption of the motions of the nervous power may be occasioned, either *by some compression of the origin of the nerves*, or *by something destroying the mobility of the nervous power*. Both these causes we must treat of more particularly; and, first, of that of compression, seemingly the most frequent occasion of apoplexy, and perhaps the occasion of all those apoplexies arising from internal causes.

1102. The loss of sense and motion in particular parts of the body, may be occasioned by a compression, either of the origin of certain nerves only, or of the same nerves in some part of their course from the brain to the organs of sense and motion. Such cases of partial compression will be more properly considered hereafter; and the affection I am now to treat of being general, it must depend upon a very general compression of the origin of the nerves, or medullary portion of the brain; and therefore, this more general compression only is to be considered here.

1103. This compression of the origin of the nerves, or medullary portion of the brain, may be produced in different ways; as,

1. By external violence fracturing and pressing in a part of the cranium.

2. By tumours, sometimes soft, sometimes bony, formed in different parts of the brain, or in its membranes, and becoming of such a bulk as to compress the medullary substance of the brain.

3. By the blood accumulated in the blood-vessels of the brain, and distending them to such a degree as to compress the medullary portion of the same.

4. By fluids effused in different parts of the brain, or into the cavity of the cranium, and accumulated in such quantity as to occasion the compression we treat of.

And, as to this last, it is to be remarked here, that the fluids effused may be of two kinds: that is, they may be either a portion of the common mass of blood, poured out from red vessels; or a portion of serum or colourless fluid, poured out chiefly by exhalants.

1104. Of these several causes of compression, the first is not to be considered here, because the removing it does not belong to our province; and the consideration of the second may be omitted, as in most instances it is neither to be discerned nor cured by any means yet known. The third and fourth causes of compression, as they are the most frequent, and are also most properly the subjects of our art, so they are those which deserve our particular attention; and we shall therefore endeavour to trace them further back in the series of causes which may produce them.

1105. Both the states of over-distention and of effusion may be produced by whatever increases the afflux and impetus of the blood in the arteries of the head; such as violent exercise, a violent fit of anger, external heat applied, or any strong pressure upon the descending aorta.

1106. But both these states of over-distention and of effusion, may also and seem to be more frequently produced by causes that operate by preventing the free return of the venous blood from the vessels of the head to the right ventricle of the heart.

1107. The venous vessels of the brain are of a conformation and distribution so peculiar, as lead us to believe, that Nature intended to retard the motion of the blood, and accumulate it in these vessels; and therefore, even very small additional resistances to the motion of the blood from these towards the right ventricle of the heart may still more readily accumulate the blood in them. Such accumulation will most readily happen in advanced life, when the venous system in general is in a plethoric state, and when this plethora takes place especially in the venous vessels of the brain. It will, in like manner, be most apt to occur in persons whose heads are large with respect to the rest of the body; and in persons of a short neck, which is unfavourable to the return of the venous blood from the head.

The accumulation of blood in the venous vessels of the brain, will also be most likely to occur in persons of a corpulent habit, either because these may be considered to be in a plethoric state, or because obesity, by occasioning a compression of the blood-vessels in other parts of the body, more readily fills those of the brain, which are entirely free from any such compression.

1108. These are the circumstances in the constitution of the body, which, producing a slower motion and return of the venous blood from the vessels of the head, favour an accumulation and distention in them; and we now proceed to mention the several occasional causes, which, in every person, may directly prevent the free return of the blood from the vessels of the head towards the heart. Such are,

1. Stooping down with the head, or other situations of the body in which the head is long kept in a depending state, and

in which the gravity of the blood increases the afflux of it by the arteries, and opposes the return of it by the veins.

2. A tight ligature about the neck, which compresses the veins more strongly than the arteries.

3. Any obstruction of a considerable number of the veins carrying the blood from the head, and more especially any considerable obstruction of the ascending vena cava.

4. Any considerable impediment of the free passage of the blood from the veins into the right ventricle of the heart; and it is commonly by this, and the immediately preceding circumstance, that polypous concretions in the cava, or right ventricle, are found to occasion apoplexy.

5. The return of blood from the veins of the head towards the heart, is especially interrupted by every circumstance that produces a more difficult transmission of the blood through the vessels of the lungs. It is well known, that, at the end of every expiration, some interruption is given to the free transmission of the blood through the lungs; and that this at the same time gives an interruption to the motion of the blood from the veins into the right ventricle of the heart. This clearly appears from that regurgitation of the blood in the veins which occasions the alternate heaving and subsiding that is perceived in the brain of living animals when the cranium is removed, and which is observed to be synchronous with the alternate motions of respiration. From this we readily perceive, that whatever occasions a difficulty in the transmission of the blood through the lungs, must also interrupt the free return of the venous blood from the vessels of the head; and must therefore favour, and perhaps produce, an accumulation of blood, and an over-distention in these vessels.

It is further to be observed, that, as a very full inspiration, continued for any length of time, occasions such an interruption of the free transmission of the blood through the lungs, as produces a suffusion of face, and a manifest turgescence of the blood-vessels of the head and neck; so every full and long-continued inspiration may occasion an accumulation of blood in the vessels of the head, to a very considerable degree. Thus, as every strong exertion of the muscular force of the body requires, and is attended with, a very full and long-continued inspiration, we thence learn why the violent exertions of muscular force have been so often the immediate or exciting causes of apoplexy.

It may also be remarked, that corpulency and obesity seem to operate very much, by occasioning a more difficult transmission of the blood through the vessels of the lungs. It appears, that in fat persons, from the compression of the blood-vessels in many parts of the body, the vessels of the lungs are thereby kept very full; so that, upon the least increase of bodily motion, which sends the blood faster into the lungs, a more frequent and laborious respiration becomes in such persons immediately necessary. This shows, that, in such persons, the blood is not freely transmitted through the lungs; a circumstance which, as in other instances, must give a constant resistance to the return of blood from the vessels of the head, and therefore favour or occasion an accumulation of blood in them.

Is the motion of the blood in the vessels of the head rendered slower by study, care, and anxiety?

1109. It is to be observed further, that these several causes (1105.—1108.) of a preternatural fulness in the blood-vessels of the brain, may produce apoplexy in different ways, according as the fulness takes place in the arteries or in the veins.

1110. Accordingly, *first*, The increased afflux of blood into the arteries of the brain, and an increased action in these, may either occasion a rupture of their extremities, and thereby an effusion of red blood producing compression; or the same afflux and increased action may occasion an increased exhalation from their extremities, of a serous fluid, which, if not as quickly re-absorbed, may soon accumulate in such quantity as to produce compression.

1111. *Secondly*, The plethoric state of the venous vessels of the brain may operate in three different ways:

1. The fulness of the veins may give such resistance to the blood flowing into them from the arteries, as to determine the impetus of the blood to be so much greater upon the extremities of the arteries as to occasion a rupture of these, and consequently an effusion of red blood, or the *Hæmorrhagia cerebri*, which HOFFMAN considers as a frequent cause of apoplexy, and which we have before explained in 772.

2. Whilst the same resistance to the blood flowing from the arteries into the veins, increases the impetus of the blood in the former, this may, without occasioning rupture, increase the exhalation from their exhalant extremities, and produce an effusion of a serous fluid; in the same manner as such resistance in the veins produces hydropic effusions in other parts of the body.

3. If we may suppose, as no lymphatics have been yet discovered in the brain, that the ordinary absorbents are not present there, and that the exhaled fluids are absorbed or taken up by the extremities of the veins; this will show still more clearly, that a resistance to the motion of the blood in the veins of the brain, may readily produce an accumulation of serous fluid in its cavities, and consequently a compression producing apoplexy.

1112. Besides these cases of apoplexy from afflux in the arteries, or resistance in the veins, an effusion of serum may happen from two other causes. The one is a relaxation of the exhalants, as in other cases of hydropic diathesis prevailing in the body; and it is not unusual for a general dropsy to end in apoplexy. The second is an over-proportion of watery parts in the mass of blood, which is therefore ready to run off by the exhalants, as in the case of an ischuria renalis; which, when it proves incurable, very commonly terminates in apoplexy.

1113. We have now mentioned the several causes of apoplexy depending upon compression; and from the whole it will appear, that the most frequent of all these causes is a plethoric state, or an accumulation and congestion of blood in the venous vessels of the head, operating, according to its degree, in producing over-distention or effusion. The frequent operation of such a cause will especially appear from a consideration of the predisponent circumstances (1095), and from the antecedent symptoms (1096.)

1114. From the view I have now given of the causes of apoplexy arising from compression, it will readily appear that there is a foundation for the common distinction of this disease into the two kinds of Sanguine and Serous. But this distinction cannot be very usefully applied in practice, as both kinds may often depend on the same cause, that is, a venous plethora, and therefore requiring very nearly the same method of cure. The only distinction that can be properly made of apoplexies from compression, is perhaps the distinction of serous apoplexy, into that depending on the plethora mentioned (1113.); and that depending upon hydropic diathesis, or an over-proportion of water in the blood (1112.); the former causes giving a proper idiopathic, the latter only a symptomatic disease.

1115. Besides the causes now mentioned, occasioning apoplexy by compression, I allege there are other causes producing the same disease, by directly destroying the mobility of the nervous power. Such causes seem to be the mephitic air arising from fermenting liquors, and from many other sources; the fumes arising from burning charcoal; the fumes of mercury, of lead, and of some other metallic substances; opium, alkohol, and many other narcotic poisons: To all which I would add the power of cold, of concussion, of electricity, and of certain passions of the mind.

1116. None of these poisons, or noxious powers, seem to kill, by acting first upon the organs of respiration, or upon the sanguiferous system; and I believe their immediate and direct action to be upon the nervous power, destroying its mobility, because the same poisons show their power in destroying the irritability of muscles and of the nerves connected with them, when both these are entirely separated from the rest of the body.

1117. It appears to me probable, that the apoplectic state in some degree accompanying, and almost always succeeding an epileptic paroxysm, does not depend upon compression, but upon a certain state of immobility of the nervous power, produced by certain circumstances in the nervous system itself, which sometimes seem to be communicated from one part of the body to another, and at length to the brain.

1118. The same observation may be made with respect to many instances of hysteric paroxysm; and the circumstances, both of epileptic and hysteric paroxysms, ending in coma, or a degree of apoplexy, lead me to think, that also the apoplexy proceeding from retrocedent or atonic gout is of the same kind, or that it depends upon an immobility of the nervous power, rather than upon compression.

1119. It may indeed happen, that as the apoplectic and gouty predispositions do often concur in the same person; so it may consequently happen, that the apoplexy coming upon gouty persons may sometimes depend upon compression; and dissections may accordingly discover that the circumstances of such a cause had preceded. But, in many cases of apoplexy following a retrocedent or atonic gout, no such antecedent or concomitant circumstances, as commonly occur in cases of compression, do distinctly or clearly appear; while others present themselves, which point out an affection of the nervous power alone.

1120. With respect, however, to the circumstances which may appear upon the dissection of persons dead of apoplexy, there may be some fallacy in judging, from those circumstances, of the cause of the disease. Whatever takes off or diminishes the mobility of the nervous power, may very much retard the motion of the blood in the vessels of the brain; and that perhaps to the degree of increasing exhalation, or even of occasioning rupture and affusion: so that, in such cases, the marks of compression may appear upon dissection, though the disease had truly depended on causes destroying the mobility of the nervous power. This seems to be illustrated and confirmed from what occurs in many cases of epilepsy. In some of these, after a repetition of fits, recovered from in the usual manner, a fatuity is induced, which commonly depends upon a watery inundation of the brain : And in other cases of epilepsy, when fits have been often repeated without any permanent consequence, there happens at length a fatal paroxysm ; and upon dissection, it appears that an effusion of blood had happened. This, I think, is to be considered as a cause of death, not as a cause of the disease : for in such cases, I suppose that the disease had diminished the action of the vessels of the brain, and thereby given occasion to a stagnation, which produced the appearances mentioned. And I apprehend the same reasoning will apply to the cases of retrocedent gout, which, by destroying the energy of the brain, may occasion such a stagnation as will produce rupture, effusion, and death ; and, in such a case, the appearances upon dissection might lead us to think that the apoplexy had depended entirely upon compression.

1121. The several causes mentioned in 1115. are often of such power as to occasion immediate death, and therefore have not commonly been taken notice of as affording instances of apoplexy ; but as the operation of the whole of these causes is similar and analogous, and as in most instances of the operation of these causes an apoplectic state is manifestly produced, there can be little doubt in considering most of the instances of their effects as cases of apoplexy, and therefore such as fall properly under our consideration here.

1122. This disease of apoplexy is sometimes entirely recovered from ; but more frequently it ends in death, or in a hemiplegia. Even when an attack of the disease is recovered from, we generally find it disposed to return ; and the repeated attacks of it almost always, sooner or later, bring on the events we have mentioned.

1123. The several events of this disease, in health, death, or another disease, may be expected and foreseen, from a consideration of the predisponent circumstances (1095.); of the antecedent symptoms (1096.); of the exciting causes (1098.); of the violence and degree of the symptoms when the disease has come on (1094.); of the duration of the disease; and of the effects of the remedies employed.

1124. From the great danger attending this disease when it has come on (1122.), it will readily appear, that our care should be chiefly directed to the prevention of it. This, I think, may be often done, by avoiding the remote and exciting causes; and how this may be accomplished, will be obvious from the enumeration of those causes given above (1098.) But it will also appear from what is said above, that the prevention of this disease will especially depend upon obviating the predisponent cause; which, in most cases, seems to be a plethoric state of the blood-vessels of the brain. This, I think, may be obviated by different means; and, in the first place, by a proper management of exercise and diet.

1125. The exercise ought to be such as may support the perspiration, without heating the body or hurrying respiration; and therefore commonly by some mode of gestation. In persons not liable to frequent fits of giddiness, and who are accustomed to riding on horseback, this exercise is of all others the best. Walking, and some other modes of bodily exercise, may be employed with the restrictions just now mentioned; but in old men, and in men of corpulent habits, bodily exercise ought always to be very moderate.

1126. In persons who pretty early in life show the predisposition to apoplexy, it is probable that a low diet, with a good deal of exercise, might entirely prevent the disease; but in persons who are advanced in life before they think of taking precautions, and are at the same time of a corpulent habit, which generally supposes their having been accustomed to full living, it might not be safe to put them upon a low diet: and it may be enough that their diet be rendered more moderate than usual, especially with respect to animal food; and that at supper such food should be abstained from altogether.

In drinking, all heating liquors are to be abstained from, as much as former habits will allow; and the smallest approach to intoxication is to be carefully shunned. For ordinary draught, small beer is to be preferred to plain water, as the latter is more ready to occasion costiveness, which in apoplectic habits is to be carefully avoided. The large use of tobacco, in any shape, may be hurtful; and except in cases where it has been accustomed to occasion a copious excretion from the head, the interruption of which might not be safe, the use of tobacco should be avoided; and even in the circumstance mentioned, where it may be in some measure necessary, the use of it should at least be rendered as moderate as possible.

1127. Evacuations by stool may certainly contribute to relieve the plethoric state of the vessels of the head; and upon an appearance of any unusual turgescence in these, purging will be very properly employed: but when no such turgescence appears, the frequent repetition of large purging might weaken the body too much; and for preventing apoplexy, it may for the most part be enough to keep the belly regular, and rather open, by gentle laxatives. In the summer season, it may be useful to drink every morning, of a gentle laxative mineral water, but never in large quantity.

1128. In the case of a plethoric state of the system, it might be supposed that blood-letting would be the most effectual means of diminishing the plethora, and of preventing its consequences: and when an attack of apoplexy is immediately threatened, blood-letting is certainly the remedy to be depended upon; and blood should be taken largely, if it can be done, from the jugular vein, or temporal artery. But when no threatening turgescence appears, the obviating plethora is not judiciously attempted by blood-letting, as we have endeavoured to demonstrate above (787.) In doubtful circumstances, leeches applied to the temples, or scarifications of the hind-head, may be more safe than general bleedings.

1129. When there are manifest symptoms of a plethoric state in the vessels of the head, a seton, or pea-issue, near the head, may be very useful in obviating any turgescence of the blood.

1130. These are the means to be employed for preventing the apoplexy which might arise from a plethoric state of the vessels of the brain; and if, at the same time, great care is taken to avoid the exciting causes (1098.), these means will be generally successful.

In the cases proceeding from other causes (1115.), as their application is so immediately succeeded by the disease, they hardly allow any opportunity for prevention.

1131. For the Cure of apoplexies from internal causes, and which I suppose to be chiefly those from compression, the usual violence and fatality of it require that the proper remedies be immediately and largely employed.

The patient is to be kept as much as possible in somewhat of an erect posture, and in cool air; and therefore neither in a warm chamber, nor covered with bed-clothes, nor surrounded with a crowd of people.

1132. In all cases of a full habit, and where the disease has been preceded by marks of a plethoric state, blood-letting is to be immediately employed, and very largely. In my opinion, it will be most effectual when the blood is taken from the jugular vein; but if that cannot be properly done, it may be taken from the arm. The opening of the temporal artery, when a large branch can be opened, so as suddenly to pour out a considerable quantity of blood, may also be an effectual remedy; but, in execution, it is more uncertain, and may be inconvenient. It may be in some measure supplied, by cupping and scarifying on the temples or hind-head. This, indeed, should seldom be omitted; and these scarifications are always preferable to the application of leeches.

With respect to every mode of blood-letting, this is to be observed, that when, in any case of apoplexy, it can be perceived that one side of the body is more affected with the loss of motion than the other, the blood-letting, if possible, should be made on the side opposite to that most affected.

1133. Another remedy to be employed is purging, to be immediately attempted by acrid glysters, and, at the same time, if any power of swallowing remain, by drastic purgatives given by the mouth. These, however, lest they may excite vomiting, should be given in divided portions at proper intervals.

1134. Vomiting has been commended by some practitioners and writers: but, apprehending that this might impel the blood with too much violence into the vessels of the head, I have never employed it.

1135. Another remedy to be immediately employed is blistering; and I judge that this is more effectual when applied to the head, or near to it, than when it is applied to the lower extremities. This remedy I do not consider as a stimulant, or capable of making any considerable revulsion: but, applied to the head, I suppose it useful in taking off the hæmorrhagic disposition so often prevailing there.

1136. It has been usual with practitioners, together with the remedies already mentioned, to employ stimulants of various kinds: but I am disposed to think them generally hurtful; and they must be so, wherever the fulness of the vessels, and the impetus of the blood in these, is to be diminished. Upon this principle it is therefore agreed, that stimulants are absolutely improper in what is supposed to be a sanguine apoplexy; but they are commonly supposed to be proper in the serous. If, however, we be right in alleging that this also commonly depends upon a plethoric state of the blood-vessels of the brain, stimulants must be equally improper in the one case as in the other.

1137. It may be argued from the almost universal employment of stimulants, and sometimes with seeming advantage, that they may not be so hurtful as my notions of the causes of appoplexy lead me to suppose. But this argument is, in several respects, fallacious; and particularly in this, that in a disease which, under every management, often proceeds so quickly to a fatal termination, the effects of remedies are not to be easily ascertained.

1138. I have now mentioned the several remedies which I think adapted to the cure of apoplexy arising from compression, and should next proceed to treat of the cure of apoplexy arising from those causes that directly destroy the mobility of the nervous power. But many of those causes are often so powerful, and thereby so suddenly fatal in their effects, as hardly to allow of time for the use of remedies; and such cases therefore have been so seldom the subjects of practice, that the proper remedies are not so well ascertained as to enable me to say much of them here.

1139. When, however, the application of the causes (1115.) is not so powerful as immediately to kill, and induces only an apoplectic state, some efforts are to be made to obviate the consequences, and to recover the patient: and even in some cases where the causes referred to, from the ceasing of the pulse and of respiration, and from a coldness coming upon the body, have induced an appearance of death; yet, if these appearances have not continued long, there may be means of recovering the persons to life and health. I cannot, indeed, treat this subject completely; but for the cure of apoplexy from several of the causes mentioned 1115. shall offer the following general directions.

1. When a poison capable of producing apoplexy has been recently taken into the stomach, if a vomiting spontaneously arises, it is to be encouraged; or if it does not spontaneously come on, a vomiting is to be immediately excited by art, in order that the poison may be thrown out as quickly as possible. If, however, the poison has been taken into the stomach long before its effects have appeared, we judge that, upon their ap-

pearance, the exciting of vomiting will be useless, and may perhaps be hurtful.

2. When the poison taken into the stomach, or otherwise applied to the body, has already induced an apoplectic state, as those causes do commonly at the same time occasion a stagnation or slower motion of the blood in the vessels of the brain and of the lungs, so it will generally be proper to relieve this congestion by taking some blood from the jugular vein, or from the veins of the arm.

3. Upon the same supposition of a congestion in the brain or lungs, it will generally be proper to relieve it by means of acrid glysters producing some evacuation from the intestines.

4. When these evacuations by blood-letting and purging have been made, the various stimulants which have been commonly proposed in other cases of apoplexy may be employed here with more probability and safety. One of the most effectual means of rousing apoplectics of this kind seems to be throwing cold water on several parts of the body, or washing the body all over with it.

5. Although the poison producing apoplexy happens to be so powerful as very soon to occasion the appearances of death above mentioned, yet, if this state has not continued long, the patient may often be recoverable, and the recovery is to be attempted by the same means that are directed to be employed for the recovery of drowned persons, and which are now commonly known.

CHAP. II.

OF PALSY.

G. XLII. Paralysis—*Motus voluntarii nonnulli tantum imminuti, sæpe cum sopore.*

voluntary motion frequently changed, frequently wt. sleep -

Sp. 1. *Paralysis (partialis) quorundam musculorum tantum.*

Sp. 2. *Paralysis (hemiplegica) alterius corporis lateris.*

Sp. 3. *Paralysis (paraplegica) dimidii corporis transversim sumpti.*

Sp. 4. *Paralysis (venenata) a potentiis sedantibus externe vel interne adhibitis.*

1140. Palsy is a disease consisting in a loss of the power of voluntary motion, but affecting certain parts of the body only, and by this it is distinguished from apoplexy (1094.). One of the most frequent forms of palsy is when it affects the whole of the muscles on one side of the body, and then the disease is named a *Hæmiplegia.*

1141. The loss of the power of voluntary motion may be owing either to a morbid affection of the muscles or organs of motion, by which they are rendered unfit for motion; or to an interruption of the influx of the nervous power into them, which is always necessary to the motions of those that are under the power of the will. The disease, from the first of these causes, as consisting in an organic and local affection, we refer entirely to the class of local diseases. I am here to consider that disease only which depends upon the interrupted influx of the nervous power; and it is to this disease alone I would give the appellation of *Palsy.* A disease depending on an interrupted influx of the nervous power, may indeed often appear as merely a local affection; but as it depends upon an affection of the most general powers of the system, it cannot be properly separated from the systematic affections.

1142. In palsy, the loss of motion is often accompanied with a loss of sense: but as this is not constantly the case, and as therefore the loss of sense is not an essential symptom of palsy, I have not taken it into my definition (1140.); and I shall not think it necessary to take any further notice of it in this treatise; because, in so far as it is in any case a part of the paralytic affection, it must depend upon the same causes, and will be cured also by the very same remedies as the loss of motion.

1143. The palsy then, or loss of motion, which is to be treated of here, may be distinguished as of two kinds; one of them depending upon an affection of the origin of the nerves in the brain, and the other depending upon an affection of the nerves in some part of their course between the brain and the organs of motion. Of the latter, as appearing in a very partial affection, I am not to speak particularly here; I shall only treat of the more general paralytic affections, and especially of the hemiplegia (1140.) At the same time I expect, that what I shall say upon this subject will readily apply to both the pathology and practice in the cases of affections more limited.

1144. The hemiplegia (1140.) usually begins with or follows a paroxysm of apoplexy; and when the hemiplegia, after subsisting for some time, becomes fatal, it is commonly by passing again into the state of apoplexy. The relation therefore or affinity between the two diseases, is sufficiently evident; and is further strongly confirmed by this, that the hemiplegia comes upon persons of the same constitution (1095.), and is preceded by the same symptoms (1098.) that have been taken notice of with respect to apoplexy.

1145. When a fit of apoplexy has gone off, and there remains a state of palsy appearing as a partial affection only, it might perhaps be supposed that the origin of the nerves is in a great measure relieved; but in so far as commonly there still remain the symptoms of the loss of memory, and of some degree of fatuity, these I think show that the organ of intellect, or the common origin of the nerves, is still considerably affected.

1146. Thus, the hemiplegia, from its evident connection with, and near relation to apoplexy, may be properly considered as depending upon like causes; and consequently, either upon a compression preventing the flow of the nervous power from the brain into the organs of motion, or upon the application of narcotic or other powers (1115.) rendering the nervous power unfit to flow in the usual and proper manner.

1147. We begin with considering the cases depending upon compression.

The compression occasioning hemiplegia may be of the same kind, and of all the different kinds that produce apoplexy, and therefore either from tumour, over-distention, or effusion. The existence of tumour giving compression, may often be better discerned in the case of palsy than in that of apoplexy, as its effects often appear at first in a very partial affection.

1148. The other modes of compression, that is, of over-distention and effusion, may, and commonly do take place, in hemiplegia; and when they do, their operation here differs from that producing apoplexy, by its effects being partial, and on one side of the body only.

It may seem difficult to conceive that an over-distention can take place in the vessels on one side of the brain only; but it may be understood: and in the case of a palsy, which is both partial and transitory, it is perhaps the only condition of the vessels of the brain that can be supposed. In a hemiplegia, indeed, which subsists for any length of time, there is probably always an effusion, either sanguine or serous: but it is likely that even the latter must be supported by a remaining congestion in the blood-vessels.

1149. That a sanguine effusion can happen without becoming very soon general, and thereby occasioning apoplexy and death, may also seem doubtful: but dissections prove that in fact it does happen, occasioning palsy only; though it is true that this more commonly depends upon an effusion of serous fluid, and of this only.

1150. Can a palsy occasioned by a compression remain, though the compression be removed?

1151. From what has been said (1144.) it will be obvious, that the hemiplegia may be prevented by all the several means proposed 1125. *et seq.* for the prevention of apoplexy.

1152. Upon the same grounds, the CURE of palsy must be very much the same with that of apoplexy (1130. *et seq.*); and when palsy has begun as an apoplexy, it is presumed, that, before it is to be considered as palsy, all those several remedies have been employed. Indeed, even when it happens that on the first attack of the disease the apoplectic state is not very complete, and that the very first appearance of the disease is as a hemiplegia, the affinity between the two diseases (1144.) is such as to lead to the same remedies in both cases. This is certainly proper in all those cases in which we can with much probability impute the disease to compression; and it is indeed seldom that a hemiplegia from internal causes comes on but with a considerable affection of the internal and even of the external senses, together with other marks of a compression of the origin of the nerves.

1153. Not only, however, where the disease can be imputed to compression, but even where it can be imputed to the application of narcotic powers, if the disease come on with the appearances mentioned at the end of last paragraph, it is to be treated in the same manner as an apoplexy by 1131.—1139.

1154. The cure of hemiplegia, therefore, on its first attack, is the same, or very nearly the same with that of apoplexy; and it seems requisite that it should be different only, 1. When the disease has subsisted for some time; 2. When the apoplectic symptoms, or those marking a considerable compression of the origin of the nerves, are removed; and particularly, 3.

when there are no evident marks of compression, and it is at the same time known that narcotic powers have been applied.

1155. In all these cases, the question arises, Whether stimulants may be employed, or how far the cure may be entirely trusted to such remedies? Upon this question, with respect to apoplexy, I have offered my opinion in 1136. And, with respect to hemiplegia, I am of opinion, that stimulants are almost always equally dangerous as in the cases of complete apoplexy; and particularly, 1. In all the cases of hemiplegia succeeding to a paroxysm of complete apoplexy; 2. In all the cases coming upon persons of the temperament mentioned in 1095., and after the same antecedents as those of apoplexy (1096.); and, 3. In all the cases coming on with symptoms of apoplexy from compression.

1156. It is, therefore, in the cases 1154. only, that stimulants are properly admissible: And even in the two first of these cases, in which a plethoric state of the blood-vessels of the brain may have brought on the disease; in which a disposition to that state may still continue; and in which even some degree of congestion may still remain; the use of stimulants must be an ambiguous remedy; so that perhaps it is in the third of these cases only that stimulants are clearly indicated and admissible.

1157. These doubts with respect to the use of stimulants may perhaps be overlooked or disregarded by those who allege that stimulants have been employed with advantage even in those cases (1155.) in which I have said they ought to be avoided.

1158. To compromise this contrariety of opinion, I must observe, that even in the cases of hemiplegia depending upon compression, although the origin of the nerves be so much compressed as to prevent so full a flow of the nervous power as is necessary to muscular motion, yet it appears from the power of sense still remaining, that the nerves are, to a certain degree, still pervious; and therefore it is possible that stimulants applied, may excite the energy of the brain so much, as in some measure to force open the compressed nerves, and to show some return of motion in paralytic muscles. Nay, further, it may be allowed, that if these stimulants be such as act more upon the nervous than upon the sanguiferous system, they may possibly be employed without any very hurtful consequence.

1159. But still it will be obvious, that although certain stimulants act chiefly upon the nervous system, yet they also act always in some measure upon the sanguiferous; so that, when they happen to have the latter effect in any considerable degree, they may certainly do much harm; and in a disease which they do not entirely cure, the mischief arising from them may not be discerned.

1160. Whilst the employment of stimulants is so often an ambiguous practice, we may perhaps go some length towards ascertaining the matter, by considering the nature of the several stimulants which may be employed, and some of the circumstances of their administration. With this view, therefore, I shall now mention the several stimulants that have been commonly employed, and offer some remarks upon their nature and use.

1161. They are in the first place to be distinguished as external or internal. Of the first kind, we again distinguish them, as they are applied to particular parts of the body only, or as they are more generally applied to the whole system. Of the first kind are,

1. The concentrated acids of vitriol or nitre; involved, however, in oily or unctuous substances, which may obviate their corrosive, without destroying their stimulant power.

2. The volatile alkaline spirits, especially in their caustic state; but involved also in oils, for the purpose just now mentioned.

3. The same volatile spirits are frequently employed by being held to the nose, when they prove a powerful stimulus to the nervous system; but it is at the same time probable, that

they may also prove a strong stimulant to the blood-vessels of the brain.

4. A brine, or strong solution of sea-salt.

5. The essential oils of aromatic plants, or of their parts.

6. The essential oils of turpentine, or of other such resinous substances.

7. The distilled oils of amber, or of other bituminous fossils.

8. The rectified empyreumatic oils of animal or vegetable substances.

9. Various vegetable acrids, particularly mustard.

10. The acrid matter found in several insects, particularly cantharides.

Some of these stimulants may be either applied in substance, or may be dissolved in ardent spirits, by which their stimulant power may be increased, or more conveniently applied.

1162. The greater part of the substances now enumerated show their stimulant power by inflaming the skin of the part to which they are applied; and when their application is so long continued as to produce this effect, it interrupts the continuance of their use, and the inflammation of the part does not seem to do so much good as the frequent repetition of a more moderate stimulus.

1163. Analogous to these stimulants is the stinging of nettles, which has been frequently commended.

Among the external stimulants, the mechanical one of friction with the naked hand, the flesh-brush, or flannel, is justly to be reckoned. Can the impregnation of the flannels to be employed, with the fumes of burning mastic, olibanum, &c. be of any service?

1164. With respect to the whole of these external stimulants, it is to be observed, that they affect the part to which they are applied much more than they do the whole system, and they are therefore indeed safer in ambiguous cases; but, for the same reason, they are of less efficacy in curing a general affection.

1165. The external applications which may be applied to affect the whole system, are the powers of heat and cold, and of electricity.

Heat, as one of the most powerful stimulants of the animal economy, has been often employed in palsies, especially by warm bathing. But as, both by stimulating the solids and rarefying the fluids, this proves a strong stimulus to the sanguiferous system, it is often an ambiguous remedy; and has frequently been manifestly hurtful in palsies depending upon a congestion of blood in the vessels of the brain. The most certain, and therefore the most proper use of warm bathing in palsies, seems to be in those that have been occasioned by the application of narcotic powers. Are the natural baths more useful by the matters with which they may be naturally impregnated?

1166. Cold applied to the body for any length of time is always hurtful to paralytic persons; but if it be not very intense, nor the application long continued, and if, at the same time, the body be capable of a brisk reaction, such an application of cold is a powerful stimulant of the whole system, and has often been useful in curing palsy. But, if the power of reaction in the body be weak, any application of cold may prove very hurtful.

1167. Electricity, in a certain manner applied, is certainly one of the most powerful stimulants that can be employed to act upon the nervous system of animals; and therefore much has been expected from it in the cure of palsy. But, as it stimulates the sanguiferous as well as the nervous system, it has been often hurtful in palsies depending upon a compression of the brain; and especially when it has been so applied as to act upon the vessels of the head. It is safer when its operation is confined to particular parts somewhat remote from the head; and, further, as the operation of electricity, when very strong, can destroy the mobility of the nervous power, I am of opinion, that it is always to be employed with caution, and that it is only safe when applied with moderate force, and when confined to certain parts of the body remote from the head. It is also my opinion, that its good effects are to be expected from its repetition rather than from its force, and that it is particularly suited to the cure of those palsies which have been produced by the application of narcotic powers.

1168. Amongst the remedies of palsy, the use of exercise is not to be omitted. In a hemiplegia, bodily exercise cannot be employed; and in a more limited affection, if depending upon a compression of some part of the brain, it would be an ambiguous remedy: but, in all cases where the exercises of gestation can be employed, they are proper; as, even in cases of compression, the stimulus of such exercise is moderate, and therefore safe; and, as it always determines to the surface of the body, it is a remedy in all cases of internal congestion.

1169. The internal stimulants employed in palsy are various, but chiefly the following.

1. The volatile alkaline salts, or spirits, as they are called, are very powerful and diffusive stimulants, operating especially on the nervous system; and even although they operate on the sanguiferous, yet, if given in frequently repeated small, rather than in large doses, their operation being transitory, is tolerably safe.

2. The vegetables of the class named Tetradynamia, are many of them powerful diffusive stimulants; and at the same time, as quickly passing out of the body, and therefore of transitory operation, they are often employed with safety. As they commonly prove diuretic, they may in this way also be of service in some cases of serous palsy.

3. The various aromatics, whether employed in substance, in tincture, or in their essential oils, are often powerful stimulants; but being more adhesive and inflammatory than those last mentioned, they are therefore in all ambiguous cases less safe.

4. Some other acrid vegetables have been employed; but we are not well acquainted with their peculiar virtues, or proper use.

5. Some resinous substances, as guaiacum, and the terebinthinate substances, or their essential oils, have been, with some probability, employed; but they are apt to become inflammatory. Decoctions of guaiacum, and some other sudorifics, have been directed to excite sweating by the application of the fumes of burning spirit of wine in the laconicum, and have in that way been found useful.

6. Many of the fetid antispasmodic medicines have been frequently employed in palsy; but I do not perceive in what manner they are adapted to the cure of this disease, and I have not observed their good effects in any cases of it.

7. Bitters, and the Peruvian bark, have also been employed; but with no propriety or advantage that I can perceive.

1170. With respect to the whole of these internal stimulants, it is to be observed, that they seldom prove very powerful; and wherever there is any doubt concerning the nature or state of the disease, they may readily do harm, and are often therefore of ambiguous use.

BOOK II.

OF ADYNAMIÆ,

OR DISEASES CONSISTING IN A WEAKNESS OR LOSS OF MOTION IN EITHER THE VITAL OR NATURAL FUNCTIONS.

ORD. II. ADYNAMIÆ.

Motus involuntarii, sive vitales, sive naturales, imminuti.

Abolition of the involuntary motions whether vital or natural

G. XLIII. SYNCOPE.—*Motus cordis imminutus, vel aliquandiu quiescens.*

Sp. 1. *Syncope (cardiaca) sine causa manifesta sæpe rediens, cum palpitatione cordis vehementi in intervallis : ex vitio cordis vel vasorum vicinorum.*

Sp. 2. *Syncope (occasionalis) a causa manifesta oriens : Ex affectione totius systematis.*

(occasionally)

CHAP. I.

OF SYNCOPE, OR FAINTING.

1171. THIS is a disease in which the action of the heart and respiration become considerably weaker than usual, or in which, for a certain time, these functions cease altogether.

1172. Physicians having observed that this affection occurs in different degrees, have endeavoured to distinguish these by different appellations ; but as it is not possible to ascertain these different degrees with any precision, so there can be no strict propriety in employing those different names, and I shall here comprehend the whole of the affections of this kind under the title of Syncope.

1173. This disease sometimes comes on suddenly to a considerable degree, but sometimes also it comes on gradually; and in the latter case, it usually comes on with a sense of languor and of anxiety about the heart,-accompanied, at the same time or immediately after, with some giddiness, dimness of sight and sounding in the ears. Together with these symptoms, the pulse and respiration become weak; and often so weak, tha the pulse is scarcely to be felt, or the respiration to be perceived; and sometimes these motions, for a certain time, cease altogether. While these symptoms take place, the face and whole surface of the body become pale, and more or less cold according to the degree and duration of the paroxysm. Very commonly, at the beginning of this, and during its continuance, a cold sweat appears, and perhaps continues on the fore-head, as well as on some other parts of the body. During the paroxysm, the animal functions, both of sense and motion, are always in some degree impaired, and very often entirely suspended. A paroxysm of syncope is often, after some time, spontaneously recovered from; and this recovery is generally attended with a sense of much anxiety about the heart.

Fits of syncope are frequently attended with or end in vomiting, and sometimes with convulsions, or an epileptic fit.

1174. These are the phenomena in this disease; and from every view of the greatest part of them, there cannot be a doubt that the proximate cause of this disease is a very weak, or a total ceasing of the action of the heart. But it will be a very difficult matter to explain in what manner the several remote causes operate in producing the proximate cause. This, however, I shall attempt, though with that diffidence which becomes me in attempting a subject that has not hitherto been treated with much success.

1175. The remote causes of syncope may, in the first place, be referred to two general heads. The one is, of those causes existing and acting in the brain, or in parts of the body remote from the heart, but acting upon it by the intervention of the brain. The other general head of the remote causes of syncope is, of those existing in the heart itself, or in parts very immediately connected with it, and thereby acting more directly upon it in producing this disease.

1175. In entering upon the consideration of the first set of those causes (1174.), I must assume a proposition which I suppose to be fully established in Physiology. It is this: That, though the muscular fibres of the heart be endowed with a certain degree of inherent power, they are still, for such action as is necessary to the motion of the blood, very constantly dependent upon a nervous power sent into them from the brain. At least this is evident, that there are certain powers acting primarily, and perhaps only in the brain, which influence and variously modify the action of the heart. I suppose, therefore, a force very constantly during life exerted in the brain, with respect to the moving fibres of the heart, as well as of every part of the body; which force I shall call the Energy of the Brain, and which I suppose may be, on different occasions, stronger or weaker with respect to the heart.

1176. Admitting these propositions, it will be obvious, that f I can explain in what manner the first set of remote causes 1174.), diminish the energy of the brain, I shall, at the same ime, explain in what manner these causes occasion a syncope.

1177. To do this, I observe, that one of the most evident f the remote causes of syncope is a hæmorrhagy, or an evauation of blood, whether spontaneous or artificial. And as it very manifest that the energy of the brain depends upon a ertain fulness and tension of its blood-vessels, for which nature ems to have industriously provided by such a conformation of ose blood-vessels as retards the motion of the blood both in e arteries and veins of the brain; so we can readily perceive, at evacuations of blood, by taking off the fulness and tension of the blood-vessels of the brain, and thereby diminishing i energy with respect to the heart, may occasion a syncope. I many persons, a small evacuation of blood will have this effect and in such cases there is often a clear proof of the manner i which the cause operates, from this circumstance, that the effect can be prevented by laying the body in a horizontal posture which, by favouring the afflux of the blood by the arteries, an retarding the return of it by the veins, preserves the necessar fulness of the vessels of the brain.

It is farther to be remarked here, that not only an evacuatio of blood occasions syncope, but that even a change in the distribution of the blood, whereby a larger portion of it flows int one part of the system of blood-vessels, and consequently les into others, may occasion a syncope. It is thus I explain th syncope that readily occurs upon the evacuation of hydrop waters, which had before filled the cavities of the abdomen thorax. It is thus also I explain the syncope that sometim happens on blood-letting, but which does not happen till th ligature which had been employed is untied, and admits a la ger afflux of blood into the blood-vessels of the arm. Bot these cases of syncope show, that an evacuation of blood do not always occasion the disease by any general effect on th whole system, but often merely by taking off the requisite fu ness of the blood-vessels of the brain.

1178. The operation of some others of the remote causes syncope may be explained on the following principles: Whil the energy of the brain is, upon different occasions, manifest stronger or weaker, it seems to be with this condition, that stronger exertion of it is necessarily followed by a weaker sta of the same. It seems to depend upon this law in the cons tution of the nervous power, that the ordinary contraction of muscle is always alternated with a relaxation of the same; th unless a contraction proceeds to the degree of spasm, the co tracted state cannot be long continued: and it seems to depe upon the same cause that the voluntary motions, which alwa require an unusual increase of exertion, occasion fatigue, debility, and at length irresistible sleep.

From this law, therefore, of the nervous power, we may understand why a sudden and violent exertion of the energy of the brain is sometimes followed by such a diminution of it as to occasion a syncope; and it is thus I suppose that a violent fit of joy produces syncope, and even death. It is upon the same principle also, I suppose, that an exquisite pain may sometimes excite the energy of the brain more strongly than can be supported, and is therefore followed by such a diminution as must occasion fainting. But the effect of this principle appears more clearly in this, that a fainting readily happens upon the sudden remission of a considerable pain; and thus I have seen a fainting occur upon the reduction of a painful dislocation.

1179. It seems to be quite analogous when a syncope immediately happens on the finishing of any great and long continued effort, whether depending on the will, or upon a propensity; and in this way a fainting sometimes happens to a woman on e bearing of a child. This may be well illustrated by obser-ng, that in persons already much weakened, even a very moderate effort will sometimes occasion fainting.

1180. To explain the operation of some other causes of syncope, it may be observed, that as the exertions of the energy of he brain are especially under the influence of the will, so it is vell known that those modifications of the will which are na-ned Passions and Emotions, have a powerful influence on the nergy of the brain in its actions upon the heart, either in in-reasing or diminishing the force of that energy. Thus anger as the former, and fear the latter effect; and thence it may be nderstood how terror often occasions a syncope sometimes of ie most violent kind, named Asphyxia, and sometimes death self.

1181. As, from what I have just mentioned, it appears, that e emotions of desire increase, and those of aversion diminish e energy of the brain; so it may be understood, how a strong aversion, a horror, or the feeling which arises upon the sight of a very disagreeable object, may occasion fainting. As an example of this, I have known more than one instance of a person's fainting at the sight of a sore in another person.

1182. To this head of horror and disgust, I refer the operation of those odours which in certain persons occasion syncope. It may be supposed, that those odours are endowed with a directly sedative power, and may thereby occasion syncope; but they are, many of them, with respect to other persons, evidently of a contrary quality: and it appears to me, that those odours occasion syncope only in those persons to whom they are extremely disagreeable.

1183. It is however very probable, that among the causes of syncope, there are some which, analogous to all those we have already mentioned, act by a directly sedative power: and such may either be diffused in the mass of blood, and thereby communicated to the brain, or may be only taken into the stomach, which so readily and frequently communicates its affections to the brain.

1184. Having now enumerated, and, as I hope, explained the most part of the remote causes of syncope, that either operate immediately upon the brain, or whose operation upon other parts of the body is communicated to the brain, it is proper to observe, that the most part of these causes operate upon certain persons more readily and more powerfully than upon others; and this circumstance, which may be considered as the predisponent cause of syncope, deserves to be inquired into.

It is, in the first place, obvious, that the operation of some of those causes depends entirely upon an idiosyncrasy in the persons upon whom they operate; which, however, I cannot pretend to explain. But, in the next place, with respect to the greater part of the other causes, their effects seem to depend upon a temperament which is in one degree or other in common to many persons. This temperament seems to consist in a great degree of sensibility and mobility, arising from a state of [illegible] the Causes

debility, sometimes depending upon original conformation, and sometimes produced by accidental occurrences in the course of life.

1185. The second set of the remote causes of syncope (1174.), or those acting directly upon the heart itself, are certain organic affections of the heart itself, or of the parts immediately connected with it, particularly the great vessels which pour blood into, or immediately receive it from the cavities of the heart. Thus a dilatation, or aneurism of the heart, a polypus in its cavities, abscesses or ulcerations in its substance, a close adherence of the pericardium to the surface of the heart, aneurisms of the great vessels near to the heart, polypus in these, and ossifications in these or in the valves of the heart, are one or other of them conditions, which, upon dissection, have been discovered in those persons who had before laboured under frequent syncope.

1186. It is obvious, that these conditions are all of them, either such as may, upon occasion, disturb the free and regular influx into, or the free egress of the blood from the cavities of the heart; or such as may otherwise disturb its regular action, by sometimes interrupting it, or sometimes exciting it to more violent and convulsive action. The latter is what is named the Palpitation of the heart, and it commonly occurs in the same persons who are liable to syncope.

1187. It is this, as I judge, that leads us to perceive in what manner these organic affections of the heart and great vessels may occasion syncope; for it may be supposed, that the violent exertions made in palpitations may either give occasion to an alternate great relaxation (1178.), or to a spasmodic contraction; and in either way suspend the action of the heart, and occasion syncope. It seems to me probable, that it is a spasmodic contraction of the heart that occasions the intermission of the pulse so frequently accompanying palpitation and syncope.

1188. Though it frequently happens that palpitation and syncope arise, as we have said, from the organic affections above mentioned, it is proper to observe, that these diseases, even when in a violent degree, do not always depend on such causes acting directly on the heart, but are often dependent on some of those causes which we have mentioned above as acting primarily on the brain.

1189. I have thus endeavoured to give the pathology of syncope; and of the cure I can treat very shortly.

The cases of syncope depending on the second set of causes (1174.), and fully recited in 1185. I suppose to be generally incurable; as our art, so far as I know, has not yet taught us to cure any one of those several causes of syncope (1185.).

The cases of syncope, depending on the first set of causes (1174.), and whose operation I have endeavoured to explain in 1177. *et seq.* I hold to be generally curable, either by avoiding the several occasional causes there pointed out, or by correcting the predisponent causes (1184.) The latter, I think, may generally be done by correcting the debility or mobility of the system, by the means which I have already had occasion to point out in another place.

CHAP. II.

OF DYSPEPSIA, OR INDIGESTION.

G. XLV. Dyspepsia.—*Anorexia, nausea, vomitus, inflatio, ructus, ruminatio, cardialgia, gastrodynia, pauciora saltem vel plura horum simul concurrentia, plerumque cum alvo adstricta, et sine alio vel ventriculi ipsius, vel aliarum partium, morbo.*

1190. A WANT of appetite, a squeamishness, sometimes a vomiting, sudden and transient distentions of the stomach, eructations of various kinds, heartburn, pains in the region of the stomach, and a bound belly, are symptoms which frequently concur in the same person, and therefore may be presumed to depend upon one and the same proximate cause. In both views, therefore, they may be considered as forming one and the same disease, to which we have given the appellation of *Dyspepsia*, set at the head of this chapter.

1191. But as this disease is also frequently a secondary and sympathic affection, so the symptoms above mentioned are often joined with many others; and this has given occasion to a very confused and undetermined description of it, under the general title of Nervous Diseases, or under that of Chronic Weakness. It is proper, however, to distinguish, and I apprehend the symptoms enumerated above are those essential to the idiopathic affection I am now to treat of.

1192. It is indeed to be particularly observed, that these symptoms are often truly accompanied with a certain state of mind which may be considered as a part of the idiopathic affection: but I shall take no further notice of this symptom in the present chapter, as it will be fully and more properly considered in the next, under the title of Hypochondriasis.

1193. That there is a distinct disease attended always with the greater part of the above symptoms, is rendered very probable by this, that all these several symptoms may arise from one and the same cause; that is, from an imbecillity, loss of tone, and weaker action in the muscular fibres of the stomach: and I conclude therefore that this imbecillity may be considered as the proximate cause of the disease I am to treat of under the name of Dyspepsia.

1194. The imbecillity of the stomach, and the consequent symptoms (1190.), may, however, frequently depend upon some organic affection of the stomach itself, as tumour, ulcer, or cirrhosity; or upon some affection of other parts of the body communicated to the stomach, as in gout, amenorrhœa, and some others. In all these cases, however, the dyspeptic symptoms are to be considered as secondary or sympathic affections, to be cured only by curing the primary disease. Such secondary and sympathic cases cannot, indeed, be treated of here: but as I presume that the imbecillity of the stomach may often take place without either any organic affection of this part, or any more primary affection in any other part of the body; so I suppose and expect it will appear, from the consideration of the remote causes, that the dyspepsia may be often an idiopathic affection, and that it is therefore properly taken into the system of methodical Nosology, and becomes the subject of our consideration here.

1195. There can be little doubt, that, in most cases, the weaker action of the muscular fibres of the stomach is the most frequent and chief cause of the symptoms mentioned in 1190.; but I dare not maintain it to be the only cause of idiopathic dyspepsia. There is, pretty certainly, a peculiar fluid in the stomach of animals, or at least a peculiar quality in the fluids, that we know to be there, upon which the solution of the aliments taken into the stomach chiefly depends: and it is at the same time probable, that the peculiar quality of the dissolving or digesting fluids may be variously changed, or that their quantity may be, upon occasion, diminished. It is therefore sufficiently probable, that a change in the quality or quantity of these fluids may produce a considerable difference in the phenomena of digestion, and particularly may give occasion to many of the morbid appearances mentioned in 1190.

1196. This seems to be very well founded, and points out another proximate cause of dyspepsia beside that we have already assigned: But, notwithstanding this, as the peculiar nature of the digestive fluid, the changes which it may undergo, or the causes by which it may be changed, are all matters so little known, that I cannot found any practical doctrine upon any supposition with respect to them; and as, at the same time, the imbecillity of the stomach, either as causing the change in the digestive fluid, or as being induced by that change, seems always to be present, and to have a great share in occasioning the symptoms of indigestion; so I shall still consider the imbecillity of the stomach as the proximate and almost sole cause of dyspepsia. And I more readily admit of this manner of proceeding, as, in my opinion, the doctrine applies very fully and clearly to the explaining the whole of the practice which experience has established as the most successful in this disease.

1197. Considering this, then, as the proximate cause of dyspepsia, I proceed to mention the several remote causes of this disease; as they are such as, on different occasions, seem to produce a loss of tone in the muscular fibres of the stomach. They may, I think, be considered under two heads. The *first* is, of those which act directly and immediately upon the stomach itself: The *second* is, of those which act upon the whole body, or particular parts of it, but in consequence of which the stomach is chiefly or almost only affected.

1198. Of the first kind are,

1. Certain sedative or narcotic substances taken into the stomach; such as tea, coffee, tobacco, ardent spirits, opium, bitters, aromatics, putrids, and acescents.

2. The large and frequent drinking of warm water, or of warm watery liquids.

3. Frequent surfeit, or immoderate repletion of the stomach.

4. Frequent vomiting, whether spontaneously arising, or excited by art.

5. Very frequent spitting, or rejection of saliva.

1199. Those causes which act upon the whole body, or upon particular parts and functions of it, are,

1. An indolent and sedentary life.

2. Vexation of mind, and disorderly passions of any kind.

3. Intense study, or close application to business too long continued.

4. Excess in venery.

5. Frequent intoxication; which partly belongs to this head, partly to the former.

6. The being much exposed to moist and cold air when without exercise.

1200. Though the disease, as proceeding from the last set of causes, may be considered as a symptomatic affection only; yet as the affection of the stomach is generally the first, always the chief, and often the only effect which these causes produce or discover, I think the affection of the stomach may be considered as the disease to be attended to in practice; and the more properly so, as in many cases the general debility is only to be cured by restoring the tone of the stomach, and by remedies first applied to this organ.

1201. For the cure of this disease, we form three several indications; a preservative, a palliative, and a curative.

The *first* is, to avoid or remove the remote causes just now enumerated.

The *second* is, to remove those symptoms which especially contribute to aggravate and continue the disease. And,

The *third* is, to restore the tone of the stomach; that is, to correct or remove the proximate cause of the disease.

1202. The propriety and necessity of the first indication is sufficiently evident, as the continued application, or frequent repetition of those causes, must continue the disease; may defeat the use of remedies; or, in spite of these, may occasion the recurrence of the disease. It is commonly the neglect of this indication which renders this disease so frequently obstinate. How the indication is to be executed, will be sufficiently obvious from the consideration of the several causes: but it is proper for the practitioner to attend to this, that the execution is often exceedingly difficult, because it is not easy to engage men to break in upon established habits, or to renounce the pursuit of pleasure; aad particularly, to persuade men that these practices are truly hurtful, which they have often practised with seeming impunity.

1203. The symptoms of this disease which especially contribute to aggravate and continue it, and therefore require to be more immediately corrected or removed, are, *first*, the crudities of the stomach already produced by the disease, and discovered by a loss of appetite, by a sense of weight and uneasiness in the stomach, and particularly by the eructation of imperfectly digested matters.

Another symptom to be immediately corrected, is an unusual quantity, or a higher degree than usual, of acidity present in the stomach, discovered by various disorders in digestion, and by other effects to be mentioned afterwards.

The *third* symptom aggravating the disease, and otherwise in itself urgent, is costiveness, and therefore constantly requiring to be relieved.

1204. The *first* of these symptoms is to be relieved by exciting vomiting; and the use of this remedy, therefore, usually and properly begins the cure of this disease. The vomiting may be excited by various means, more gentle or more violent. The former may answer the purpose of evacuating the contents of the stomach: but emetics, and vomiting, may also excite the ordinary action of the stomach; and both, by variously agitating the system, and particularly by determining to the surface of the body, may contribute to remove the causes of the disease. But these latter effects can only be obtained by the use of emetics of the more powerful kind, such as the antimonial emetics especially are.

1205. The *second* symptom to be palliated, is an excess of acidity, either in quantity or quality, in the contents of the stomach. In man there is a quantity of acescent aliment almost constantly taken in, and, as I think, always undergoes an acetous fermentation in the stomach; and it is, therefore, that, in the human stomach, and in the stomachs of all animals using vegetable food, there is always found an acid present. This acid, however, is generally innocent, and occasions no disorder, unless either the quantity of it is very large, or the acidity proceeds to a higher degree than usual. But, in either of these cases, the acid occasions various disorders, as flatulency, eructation, heartburn, gnawing pains of the stomach, irregular appetites and cravings, looseness, griping, emaciation, and debility. To obviate or remove these effects aggravating and continuing the disease, it is not only necessary to correct the acid present in the stomach; but, especially as this acid proves a ferment determining and increasing the acescency of the aliments afterwards taken in, it is proper also, as soon as possible, to correct the disposition to excessive acidity.

1206. The acidity present in the stomach may be corrected by the use of alkaline salts, or absorbent earths, or by such substances containing these which can be decomposed by the acid of the stomach. Of the alkalines, the caustic is more effectual than the mild; and this accounts for the effects of lime water. By employing absorbents we avoid the excess of alkali which might sometimes take place. The absorbents are different, as they form a neutral more or less laxative; and hence the difference between magnesia alba and other absorbents. It is to be observed, that alkalines and absorbents may be employed to excess; as, when employed in large quantity, they may deprive the animal fluids of the acid necessary to their proper composition.

1207. The disposition to acidity may be obviated by avoiding acescent aliments, and using animal food little capable of acescency. This, however, cannot be long continued without corrupting the state of our blood; and, as vegetable food cannot be entirely avoided, the excess of their acescency may, in some measure, be avoided, by choosing vegetable food the least disposed to a vinous fermentation, such as leavened bread and well-fermented liquors, and, instead of fresh native acids, employing vinegar.

1208. The acid arising from acescent matters in a sound state of the stomach, does not proceed to any high degree, or is again soon involved and made to disappear; but this does not always happen, and a more copious acidity, or a higher degree of it, may be produced, either from a change in the digestive fluids, become less fit to moderate fermentation and to cover acidity, or from their not being supplied in due quantity. How the former may be occasioned, we do not well understand; but we can readily perceive that the latter, perhaps the former also, may proceed from a weaker action of the muscular fibres of the stomach. In certain cases, sedative passions, immediately after they arise, occasion the appearance of acidity in the stomach which did not appear before; and the use of stimulants often corrects or obviates an acidity that would otherwise have appeared. From these considerations, we conclude, that the production and subsistence of acidity in the stomach is to be especially prevented by restoring and exciting the proper action of it, by the several means to be mentioned hereafter.

1209. But it is also to be further observed, that though there are certain powers in the stomach for preventing a too copious acidity, or a high degree of it, they are not however always sufficient for preventing acescency, or for covering the acidity produced; and therefore, as long as vegetable substances remain in the stomach, their acescency may go on and increase. From hence we perceive, that a special cause of the excess of acidity may be, the too long retention of acescent matters in the stomach; whether this may be from these matters being of more difficult solution, or from the weakness of the stomach, more slowly discharging its contents into the duodenum, or from some impediment to the free evacuation of the stomach by the pylorus. The latter of these causes we are well acquainted with, in the case of a scirrhous pylorus, producing commonly the highest degree of acidity. In all the instances of this scirrhosity I have met with, I have found it incurable; but the first of these causes is to be obviated by avoiding such aliments as are of difficult solution; and the second is to be mended by the several remedies for exciting the action of the stomach, to be mentioned afterwards.

1210. The *third* symptom commonly accompanying dyspepsia, which requires to be immediately removed, is costiveness.

There is so much connection between the several portions of the alimentary canal with respect to the peristaltic motion, that, if accelerated or retarded in any one part, the other parts of it are commonly affected in the same manner. Thus, as the brisker action of the stomach must accelerate the action of the intestines, so the slower action of the intestines must in some measure retard that of the stomach. It is, therefore, of consequence to the proper action of the stomach, that the peristaltic motion of the intestines determining their contents downwards, be regularly continued; and that all costiveness, or interruption of that determination, be avoided. This may be done by the various means of exciting the action of the intestines; but it is to be observed here, that as every considerable evacuation of the intestines weakens their action, and is ready, therefore, to induce costiveness when the evacuation is over; so those purgatives which produce a large evacuation are unfit for correcting the habit of costiveness. This, therefore, should be attempted by medicines which do no more than solicit the intestines to a more ready discharge of their present contents, without either hurrying their action, or increasing the excretions made into their cavity; either of which effects might produce a purging. There are, I think, certain medicines peculiarly proper on this occasion, as they seem to stimulate especially the great guts, and to act little on the higher parts of the intestinal canal.

1211. We have thus mentioned the several means of executing our second indication; and I proceed to the *third*, which is, as we have said, the proper curative; and it is to restore the tone of the stomach, the loss of which we consider as the proximate cause of the disease, or at least as the chief part of it. The means of satisfying this indication we refer to two heads. One is, of those means which operate directly and chiefly on the stomach itself; and the other is, of those means which, operating upon the whole system, have their tonic effects thereby communicated to the stomach.

1212. The medicines which operate directly on the stomach, are either stimulants or tonics.

The stimulants are saline or aromatic.

The saline are acids or neutrals.

Acids of all kinds seem to have the power of stimulating the stomach, and therefore often increase appetite : but the native acids, as liable to fermentation, may otherwise do harm, and are therefore of ambiguous use. The acids, therefore, chiefly and successfully employed, are the vitriolic, muriatic, and the distilled acid of vegetables, as it is found in tar-water, which are all of them antizymics.

The neutral salts answering this intention, are especially those which have the muriatic acid in their composition, though it is presumed that neutrals of all kinds have more or less of the same virtue.

1213. The aromatics, and perhaps some other acrids, certainly stimulate the stomach, as they obviate the acescency and flatulency of vegetable food : but their stimulus is transitory ; and if frequently repeated, and taken in large quantities, they may hurt the tone of the stomach.

1214. The tonics employed to strengthen the stomach are bitters, bitters and astringents combined, and chalybeates.

Bitters are undoubtedly tonic medicines, both with respect to the stomach and the whole system : but their long continued use has been found to destroy the tone of the stomach, and of the whole system; and whether this is from the mere repetition of their tonic operation, or from some narcotic power joined with the tonic in them, I am uncertain.

1215. Bitters and astringents combined, are, probably, more effectual tonics than either of them taken singly ; and we suppose such a combination to take place in the Peruvian bark ; which therefore proves a powerful tonic, both with respect to the stomach and to the whole system. But I have some ground to suspect, that the long continued use of this bark may, like bitters, destroy both the tone of the stomach and of the whole system.

1216. Chalybeates may be employed as tonics in various forms, and in considerable quantities, with safety. They have been often employed in the form of mineral waters, and seemingly with success: but whether this is owing to the chalybeate in the composition of these waters, or to some other circumstances attending their use, I dare not positively determine; but the latter opinion seems to me the more probable.

1217. The remedies which strengthen the stomach, by being applied to the whole body, are, exercise and the application of cold.

As exercise strengthens the whole body, it must also strengthen the stomach; but it does this also in a particular manner, by promoting perspiration, and exciting the action of the vessels on the surface of the body, which have a particular consent with the muscular fibres of the stomach. This particularly explains why the exercises of gestation, though not the most powerful in strengthening the whole system, are, however, very powerful in strengthening the stomach; of which we have a remarkable proof in the effects of sailing. In strengthening the general system, as fatigue must be avoided, so bodily exercise is of ambiguous use; and perhaps it is thereby, that riding on horseback has been so often found to be one of the most powerful means of strengthening the stomach, and thereby of curing dyspepsia.

1218. The other general remedy of dyspepsia, is the application of cold: which may be in two ways; that is, either by the application of cold air, or of cold water. It is probable, that, in the atmosphere constantly surrounding our bodies, a certain degree of cold, considerably less than the temperature of our bodies themselves, is necessary to the health of the human body. Such a degree of cold seems to strengthen the vessels on the surface of the body, and therefore the muscular fibres of the stomach. But, further, it is well known, that if the body is in exercise sufficient to support such a determination to the surface, as to prevent the cold from producing an entire constriction of the pores; a certain degree of cold in the atmosphere, with such exercise, will render the perspiration more considerable. From the sharp appetite that in such circumstances is commonly produced, we can have no doubt, that by the application of such cold, the tone of the stomach is considerably strengthened. Cold air, therefore, applied with exercise, is a most powerful tonic with respect to the stomach: and this explains why, for that purpose, no exercises within doors, or in close carriages, are so useful as those in the open air.

1219. From the same reasoning, we can perceive, that the application of cold water, or cold bathing, while it is a tonic with respect to the system in general, and especially as exciting the action of the extreme vessels, must in both respects be a powerful means of strengthening the tone of the stomach.

1220. These are the remedies to be employed towards a radical cure of idiopathic dyspepsia; and it might be, perhaps, expected here, that I should treat also of the various cases of the sympathic disease. But it will be obvious that this cannot be properly done without treating of all the diseases of which the dyspepsia is a symptom, which cannot be proper in this place. It has been partly done already, and will be farther treated of in the course of this work. In the mean time, it may be proper to observe, that there is not so much occasion for distinguishing between the idiopathic and sympathic dyspepsia, as there is in many other cases of idiopathic and sympathic diseases. For, as the sympathic cases of dyspepsia are owing to a loss of tone in some other part of the system, which is from thence communicated to the stomach; so the tone of the stomach restored, may be communicated to the part primarily affected; and therefore the remedies of the idiopathic may be often usefully employed, and are often the remedies chiefly employed, in sympathic dyspepsia.

1221. Another part of our business here might be to say, how some other of the urgent symptoms, beside those above mentioned, are to be palliated. On this subject, I think it is enough to say, that the symptoms chiefly requiring to be immediately relieved, are flatulency, heartburn, other kinds of pain in the region of the stomach, and vomiting.

The dyspeptic are ready to suppose that the whole of their disease consists in a flatulency. In this it will be obvious that they are mistaken; but, although the flatulency is not to be entirely cured, but by mending the imbecillity of the stomach by the means above mentioned, yet the flatulent distention of the stomach may be relieved by carminatives, as they are called, or medicines that produce a discharge of wind from the stomach; such are the various antispasmodics, of which the most effectual is the vitriolic æther.

The heartburn may be relieved by absorbents, antispasmodics, or demulcents.

The other pains of the stomach may be sometimes relieved by carminatives, but most certainly by opiates.

Vomiting is to be cured most effectually by opiates thrown by injection into the anus.

CHAP. III.

OF HYPOCHONDRIASIS, OR THE HYPOCHONDRIAC AFFECTION, COMMONLY CALLED VAPOURS OR LOW SPIRITS.

G. XLV. HYPOCHONDRIASIS.—*Dyspepsia cum languore, moestitia, et metu, ex causis non æquis, in temperamento melancholico.*

1222. In certain persons there is a state of mind distinguished by a concurrence of the following circumstances: A languor, listlessness, or want of resolution and activity with respect to all undertakings; a disposition to seriousness, sadness, and timidity; as to all future events, an apprehension of the worst or most unhappy state of them; and therefore, often upon slight grounds, an apprehension of great evil. Such persons are particularly attentive to the state of their own health, to every the smallest change of feeling in their bodies; and from any unusual feeling, perhaps of the slightest kind, they apprehend great danger, and even death itself. In respect to all these feelings and apprehensions, there is commonly the most obstinate belief and persuasion.

1223. This state of mind is the Hypochondriasis of medical writers. See Linnæi Genera Morborum, Gen. 76. Sagari Systema Symptomaticum, Class XIII. Gen. 5. The same state of mind is what has been commonly called *Vapours* and *Low Spirits.* Though the term *Vapours* may be founded on a false theory, and therefore improper, I beg leave, for a purpose that will immediately appear, to employ it for a little here.

1224. Vapours, then, or the state of mind described above, is, like every other state of mind, connected with a certain state of the body, which must be inquired into, in order to its being treated as a disease by the art of physic.

1225. This state of the body, however, is not very easily ascertained; for we can perceive, that on different occasions it is very different; vapours being combined sometimes with dyspepsia, sometimes with hysteria, and sometimes with melancholia, which are diseases seemingly depending on very different states of the body.

1226. The combination of vapours with dyspepsia is very requent, and in seemingly very different circumstances. It is specially these different circumstances that I would wish to asertain; and I remark, that they are manifestly of two different inds. First, as the disease occurs in young persons of both exes, in persons of a sanguine temperament, and of a lax and accid habit. Secondly, as it occurs in elderly persons of both sexes, of a melancholic temperament, and of a firm and rigid habit.

1227. These two different cases of the combination of vapours and dyspepsia, I consider as two distinct diseases, to be distinguished chiefly by the temperament prevailing in the persons affected.

As the dyspepsia of sanguine temperaments is often without vapours; and as the vapours, when joined with dyspepsia in such temperaments, may be considered as perhaps always a symptom of the affection of the stomach; so to this combination of dyspepsia and vapours, I would still apply the appellation of *Dyspepsia*, and consider it as strictly the disease treated of in the preceding chapter.

But the combination of dyspepsia and vapours in melancholic temperaments, as the vapours in the turn of mind peculiar to the temperament, nearly that described above in 1222., are essential circumstances of the disease: and as this turn of mind is often with few, or only slight symptoms of dyspepsia, and even though the latter be attending, as they seem to be rather the effects of the general temperament, than of any primary or topical affection of the stomach; I consider this combination as a very different disease from the former, and would apply to it strictly the appellation of *Hypochondriasis*.

1228. Having thus pointed out a distinction between Dyspepsia and Hypochondriasis, I shall now, using these terms in the strict sense above mentioned, make some observations which may, I think, illustrate the subject, and more clearly and fully establish the distinction proposed.

1229. The dyspepsia often appears early in life, and is frequently much mended as life advances; but the hypochondriasis seldom appears early in life, and more usually in more advanced years only; and more certainly still when it has once taken place, it goes on increasing as life advances to old age.

This seems to be particularly well illustrated, by our observing the changes in the state of the mind which usually take place in the course of life. In youth, the mind is cheerful, active, rash, and moveable; but as life advances, the mind by degrees becomes more serious, slow, cautious, and steady; till at length in old age, the gloomy, timid, distrustful, and obstinate state of melancholic temperaments is more exquisitely formed. In producing these changes, it is true that moral causes have a share; but it is at the same time obvious, that the temperament of the body determines the operation of these moral causes sooner or later, and in a greater or less degree, to have their effects. The sanguine temperament retains longer the character of youth, while the melancholic temperament brings on more early the manners of old age.

1230. Upon the whole, it appears, that the state of the mind which attends, and especially distinguishes hypochondriasis, is the effect of that same rigidity of the solids, torpor of the nervous power, and peculiar balance between the arterial and venous systems which occur in advanced life, and which at all times take place more or less in melancholic temperaments. If therefore there be also somewhat of a like state of mind attending that dyspepsia which occurs early in life in sanguine temperaments and lax habits, it must depend upon a different state of the body, and probably upon a weak and moveable state of the nervous power.

1231. Agreeable to all this, in dyspepsia there is more of spasmodic affection, and the affection of the mind (1222.) is often absent, and when present, is perhaps always of a slighter kind; while in hypochondriasis, the affection of the mind is more constant, and the symptoms of dyspepsia, or the affections of the stomach, are often absent, or when present are in a slighter degree.

I believe the affection of the mind is commonly different in the two diseases. In dyspepsia, it is often languor aud timidity only, easily dispelled; while in hypochondriasis, it is generally the gloomy and rivetted apprehension of evil.

The two diseases are also distinguished by some other circumstances. Dyspepsia, as I have said, is often a symptomatic affection; while hypochondriasis is perhaps always a primary and idiopathic disease.

As debility may be induced by many different causes, dyspepsia is a frequent disease; while hypochondriasis, depending upon a peculiar temperament, is more rare.

1232. Having thus endeavoured to distinguish the two diseases, I suppose the peculiar nature and proximate cause of *hypochondriasis* will be understood; and I proceed therefore to treat of its cure.

So far as the affections of the body, and particularly of the stomach, are the same here as in the case of *dyspepsia*, the method of cure might be supposed to be also the same; and accordingly the practice has been carried on with little distinction; but I am persuaded that a distinction is often necessary.

1233. There may be a foundation here for the same preservative indication as first laid down in the cure of *dyspepsia* (1202.); but I cannot treat this subject so clearly or fully as I could wish, because I have not yet had so much opportunity of observation as I think necessary to ascertain the remote causes; and I can hardly make use of the observations of others, who have seldom or never distinguished between the two diseases. What indeed has been said with respect to the remote causes of *melancholia*, will often apply to the *hypochondriasis*, which I now treat of; but the subject of the former has been so much involved in a doubtful theory, that I find it difficult to select the facts that might properly and strictly apply to the latter. I delay this subject, therefore, till another occasion; but in the mean time trust, that what I have said regarding the nature of the disease, and some remarks I shall have occasion to offer in considering the method of cure, may in some measure supply my deficiency on this subject of the remote causes.

1234. The *second* indication laid down in the cure of dyspepsia (1201.) has properly a place here; but it is still to be executed with some distinction.

1235. An anorexia, and accumulation of crudities in the stomach, does not so commonly occur in hypochondriasis as in dyspepsia; and therefore vomiting (1204.) is not so often necessary in the former as in the latter.

1236. The symptom of excess of acidity, from the slow evacuation of the stomach in melancholic temperaments, often arises to a very high degree in hypochondriasis; and therefore, for the same reason as in 1205. it is to be obviated and corrected with the utmost care. It is upon this account that the several antacids, and the other means of obviating acidity, are to be employed in hypochondriasis, and with the same attentions and considerations as in 1206. and following; with this reflection, however, that the exciting the action of the stomach there mentioned, is to be a little differently understood, as shall be hereafter explained.

1237. As costiveness, and that commonly to a considerable degree, is a very constant attendant of hypochondriasis, so it is equally hurtful as in dyspepsia. It may be remedied by the same means in the former as in the latter, and they are to be employed with the same restrictions as in 1210.

1238. It is especially with respect to the *third* indication laid down in the cure of dyspepsia (1201.) that there is a difference of practice to be observed in the cure of hypochondriasis; and that often one directly opposite to that in the case of dyspepsia is to be followed.

1239. In dyspepsia, the chief remedies are the tonic medicines, which to me seem neither necessary nor safe in hypochondriasis; for in this there is not a loss of tone, but a want of activity, that is to be remedied.

Chalybeate mineral waters have commonly been employed in hypochondriasis, and seemingly with success. But this is probably to be imputed to the amusement and exercise usually accompanying the use of these waters, rather than to the tonic power of the small quantity of iron which they contain. Perhaps the elementary water, by favouring the excretions, may have a share in relieving the disease.

1240. Cold bathing is often highly useful to the dyspeptic, and as a general stimulant may sometimes seem useful to the hypochondriac; but it is not commonly so to the latter: while, on the other hand, warm bathing, hurtful to the dyspeptic, is often extremely useful to the hypochondriac.

1241. Another instance of a contrary practice necessary in the two diseases, and illustrating their respective natures, is, that the drinking tea and coffee is always hurtful to the dyspeptic, but is commonly extremely useful to the hypochondriac.

1242. Exercise, as it strengthens the system, and thereby the stomach, and more especially, as by increasing the perspiration it excites the action of the stomach, it proves one of the most useful remedies in dyspepsia; and further, as by increasing the perspiration, it excites the activity of the stomach, it likewise proves an useful remedy in the hypochondriasis. However, in the latter case, as I shall explain presently, it is still a more useful remedy by its operation upon the mind than by that upon the body.

1243. It is now proper that we proceed to consider the most important article of our practice in this disease, and which is, to consider the treatment of the mind, an affection of which sometimes attends dyspepsia, but is always the chief circumstance in hypochondriasis. What I am to suggest here, will apply to both diseases; but it is the hypochondriasis that I am to keep most constantly in view.

1244. The management of the mind, in hypochondriacs, is often nice and difficult. The firm persuasion that generally prevails in such patients, does not allow their feelings to be treated as imaginary, nor their apprehension of danger to be considered as groundless, though the physician may be persuaded that it is the case in both respects. Such patients, therefore, are not to be treated either by raillery or by reasoning.

It is said to be the manner of hypochondriacs to change of-en their physician, and indeed they often do it consistently : for ı physician who does not admit the reality of the disease, canıot be supposed to take much pains to cure it, or to avert the langer of which he entertains no apprehension.

If in any case the pious fraud of a placebo be allowable, it eems to be in treating hypochondriacs; who, anxious for relief, re fond of medicines, and, though often disappointed, will still ake every new drug that can be proposed to them.

1245. As it is the nature of man to indulge every present emoion, so the hypochondriac cherishes his fears, and, attentive to very feeling, finds in trifles light as air a strong confirmation f his apprehensions. His cure therefore depends especially upn the interruption of his attention, or upon its being diverted ɔ other objects than his own feelings.

1246. Whatever aversion to application of any kind may apear in hypochondriacs, there is nothing more pernicious to them ıan absolute idleness, or a vacancy from all earnest pursuit. It owing to wealth admitting of indolence, and leading to the purıit of transitory and unsatisfying amusements, or to that of exausting pleasures only, that the present times exhibit to us so ıany instances of hypochondriacism.

The occupations of business suitable to their circumstances ıd situation in life, if neither attended with emotion, anxiety, or fatigue, are always to be admitted, and persisted in by hyochondriacs. But occupations upon which a man's fortune epends, and which are always, therefore, objects of anxiety to ıelancholic men ; and more particularly where such occupations e exposed to accidental interruptions, disappointments, and faires, it is from these that the hypochondriac is certainly to be ithdrawn.

1247. The hypochondriac who is not necessarily, by circumances or habits, engaged in business, is to be drawn from his tention to his own feelings by some amusement.

The various kinds of sport and hunting, as pursued with some ardour, and attended with exercise, if not too violent are amongst the most useful.

All those amusements which are in the open air, joined with moderate exercise, and requiring some dexterity, are generally of use.

Within doors, company which engages attention, which i willingly yielded to, and is at the same time of a cheerful kind will be always found of great service.

Play, in which some skill is required, and where the stake is not an object of much anxiety, if not too long protracted, may often be admitted.

In dyspeptics, however, gaming, liable to sudden and considerable emotions, is dangerous ; and the long continuance of it, with night-watching, is violently debilitating. But in melancholics, who commonly excel in skill, and are less susceptible of violent emotions, it is more admissible, and is often the only amusement that can engage them.

Music, to a nice ear, is a hazardous amusement, as long attention to it is very fatiguing.

1248. It frequently happens, that amusements of every kind are rejected by hypochondriacs ; and in that case, mechanical means of interrupting thought are the remedies to be sought for.

Such is to be found in brisk exercise, which requires some attention in the conduct of it.

Walking is seldom of this kind ; though, as gratifying to the restlessness of hypochondriacs, it has sometimes been found useful.

The required interruption of thought is best obtained by riding on horseback, or in driving a carriage of any kind.

The exercise of sailing, except it be in an open boat, engaging some attention, does very little service.

Exercise in an easy carriage, in the direction of which the traveller takes no part, unless it be upon rough roads, or driven pretty quickly, and with long continuance, is of little advantage.

1249. Whatever exercise may be employed, it will be most ffectual when employed in the pursuit of a journey; first, beause it withdraws a person from many objects of uneasiness nd care which might present themselves at home; secondly, s it engages in more constant exercise, and in a greater degree f it than is commonly taken in airings about home; and, lasty, as it is constantly presenting new objects which call forth a erson's attention.

1250. In our system of Nosology, we have, next to hypohondriasis, placed the Chlorosis, because I once thought it ight be considered as a genus, comprehending, besides the hlorosis of Amenorrhœa, some species of Cachexy: but, as I annot find this to be well founded, and cannot distinctly point ut any such disease, I now omit considering Chlorosis as a enus here; and, as a symptom of Amenorrhœa, I have eneavoured before to explain it under that title.

BOOK III.

OF SPASMODIC AFFECTIONS, WITHOUT FEVER.

ORD. III. SPASMI.

Musculorum vel fibrarum muscularium motus abnormes.

INTRODUCTION.

1251. UNDER this title I am to comprehend all the diseases which consist in *motu abnormi*; that is, in a preternatural state of the contraction and motion of the muscular or moving fibres in any part of the body.

1252. It will hence appear, why, under this title, I have comprehended many more diseases than Sauvages and Sagar have comprehended under the title of Spasmi, or than Linnæus has done under the title of Motorii. But I expect it will be obvious, that, upon this occasion, it would not be proper to confine our view to the affections of voluntary motion only; and if those Nosologists have introduced into the class of Spasmi, Palpitatio and Hysteria, it will be, with equal propriety, that Asthma, Colica, and many other diseases, are admitted.

1253. It has been hitherto the method of our Nosologists to divide the Spasmi into the two orders of Tonici and Clonici, Spastici and Agitatorii; or, as many at present use the terms, into Spasms strictly so called, and Convulsions. I find, however, that many, and indeed most of the diseases to be considered under our title of Spasmodic Affections, in respect of Tonic r Clonic contractions, are of a mixed kind : and, therefore, I annot follow the usual general division; but have attempted nother, by arranging the several Spasmodic Diseases according s they affect the several functions, Animal, Vital, or Natural.

›ECT. I.—*Of the Spasmodic Affections of the Animal Functions.*

1254. Agreeable to the language of the ancients, the whole f the diseases to be treated of in this section might be termed *pasmi;* and many of the moderns continue to apply the term ı the same manner: but I think it convenient to distinguish ıe terms of *Spasm* and *Convulsion*, by applying the former rictly to what has been called the *Tonic*, and the latter to hat has been called the *Clonic* Spasm. There is certainly a ›undation for the use of those different terms, as there is a re-ıarkable difference in the state of the contraction of moving bres upon different occasions. This I have indeed pointed out efore in my treatise of Physiology, but must also repeat it here.

1255. In the exercise of the several functions of the animal :onomy, the contractions of the moving fibres are excited by ıe will, or by certain other causes specially appointed by na-ıre for exciting those contractions; and these other causes I ıme the *natural causes*. In a state of health the moving fibres e contracted by the power of the will, and by the *natural ıuses* only. At the same time, the contractions produced are force and velocity regulated by the will, or by the circum-ances of the natural causes; and the contractions, whether oduced by the one or the other, are always soon succeeded by state of relaxation, and are not repeated but when the power the will or of the natural causes is again applied.

1256. Such are the conditions of the action of the moving ›res in a state of health; but in a morbid state, the contrac-›ns of the muscles and moving fibres ordinarily depending up-ı the will, are excited without the concurrence of the will, or ntrary to what the will intends; and in the other functions they are excited by the action of unusual and unnatural causes. In both cases, the contractions produced may be in two different states. The one is, when the contractions are to a more violent degree than is usual in health, and are neither succeeded by a spontaneous relaxation, nor even readily yield to an extension either from the action of antagonist muscles, or from other extending powers applied. This state of contractions is what has been called a *Tonic Spasm*, and is what I shall name simply and strictly a *Spasm*. The other morbid state of contractions is, when they are succeeded by a relaxation, but are immediately again repeated without the concurrence of the will or of the repetition of natural causes, and are at the same time commonly, with respect to velocity and force, more violent than in a healthy state. This state of morbid contraction is what has been named a *Clonic Spasm*, and what I shall name simply and strictly a *Convulsion*.

In this section I shall follow nearly the usual division of the spasmodic diseases, into those consisting in Spasm, and those consisting in Convulsion; but it may not perhaps be in my power to follow such division exactly.

CHAP. I.

OF TETANUS.

G. XLVII. TETANUS.—*Plurium musculorum rigiditas spastica.*

1257. BOTH Nosologists and Practical Writers have distinguished tetanic complaints into the several species of Tetanus, Opisthotonos, and Emprosthotonos ; and I have in my Nosology put the Trismus, or Locked Jaw, as a genus distinct from the Tetanus. All this, however, I now judge to be improper ; and am of opinion, that all the several terms mentioned, denote, and are applicable only to different degrees of one and the same disease ; the history and cure of which I shall endeavour to deliver in this chapter.

1258. Tetanic complaints may, from certain causes, occur in every climate that we are acquainted with ; but they occur most frequently in the warmest climates, and most commonly in the warmest seasons of such climates. These complaints affect all ages, sexes, temperaments, and complexions. The causes from whence they commonly proceed are cold and moisture applied o the body while it is very warm, and especially the sudden viissitudes of heat and cold. Or, the disease is produced by punctures, lacerations, or other lesions of nerves in any part of he body. There are, probably, some other causes of this disase ; but they are neither distinctly known nor well ascertained. Though the causes mentioned do, upon occasion, affect all sorts f persons, they seem however to attack persons of middle age more frequently than the older or younger, the male sex more frequently than the female, and the robust and vigorous more requently than the weaker.

1259. If the disease proceed from cold, it commonly comes n in a few days after the application of such cold ; but if it ase from a puncture or other lesion of a nerve, the disease does ot commonly come on for many days after the lesion has hapened, very often when there is neither pain nor uneasiness reaining in the wounded or hurt part, and very frequently when e wound has been entirely healed up.

1260. The disease sometimes comes on suddenly to a viont degree, but more generally it approaches by slow degrees to s violent state. In this case it comes on with a sense of stiffness the back part of the neck, which, gradually increasing, reners the motion of the head difficult and painful. As the rigidity of the neck comes on and increases, there is commonly at the same time a sense of uneasiness felt about the root of the tongue; which, by degrees, becomes a difficulty of swallowing, and at length an entire interruption of it. While the rigidity of the neck goes on increasing, there arises a pain, often violent, at the lower end of the sternum, and from thence shooting into the back. When this pain arises, all the muscles of the neck, and particularly those of the back part of it, are immediately affected with spasm, pulling the head strongly backwards. At the same time, the muscles that pull up the lower jaw, which upon the first approaches of the disease were affected with some spastic rigidity, are now generally affected with more violent spasm, and set the teeth so closely together, that they do not admit of the smallest opening.

This is what has been named the *Locked Jaw*, and is often the principal part of the disease. When the disease has advanced thus far, the pain at the bottom of the sternum returns very frequently, and with it the spasms of the hind-neck and lower jaw are renewed with violence and much pain. As the disease thus proceeds, a greater number of muscles come to be affected with spasms. After those of the neck, those along the whole of the spine become affected, bending the trunk of the body strongly backwards; and this is what has been named the *Opisthotonos*.

In the lower extremities, both the flexor and extensor muscles are commonly at the same time affected, and keep the limbs rigidly extended. Though the extensors of the head and back are usually the most strongly affected, yet the flexors, or those muscles of the neck that pull the head forward, and the muscles that should pull down the lower jaw, are often at the same time strongly affected with spasm. During the whole of the disease, the abdominal muscles are violently affected with spasm, so that the belly is strongly retracted, and feels hard as a piece of board.

At length the flexors of the head and trunk become so strongly affected as to balance the extensors, and to keep the head and trunk straight, and rigidly extended, incapable of being moved in any way; and it is to this state the term of *Tetanus* has been strictly applied. At the same time, the arms, little affected before, are now rigidly extended; the whole of the muscles belonging to them being affected with spasms, except those that move the fingers, which often to the last retain some mobility. The tongue also long retains its mobility; but at length it also becomes affected with spasms, which attacking certain of its muscles only, often thrust it violently out between the teeth.

At the height of the disease, every organ of voluntary motion seems to be affected; and, amongst the rest, the muscles of the face. The forehead is drawn up into furrows; the eyes, sometimes distorted, are commonly rigid, and immoveable in their sockets; the nose is drawn up, and the cheeks are drawn backwards towards the ears, so that the whole countenance expresses the most violent grinning. Under these universal spasms, a violent convulsion commonly comes on, and puts an end to life.

1261. These spasms are every where attended with most violent pains. The utmost violence of spasm is, however, not constant; but, after subsisting for a minute or two, the muscles admit of some remission of their contraction, although of no such relaxation as can allow the action of their antagonists. This remission of contraction gives also some remission of pain; but neither are of long duration. From time to time, the vioent contractions and pains are renewed sometimes every ten or ifteen minutes, and that often without any evident exciting ause. But such exciting causes frequently occur; for almost very attempt to motion, as attempting a change of posture, eneavouring to swallow, and even to speak, sometimes gives ocasion to a renewal of the spasms over the whole body.

1262. The attacks of this disease are seldom attended with ny fever. When the spasms are general and violent, the pulse contracted, hurried, and irregular; and the respiration is af-

-fected in like manner; but, during the remission, both the pulse and respiration usually return to their natural state. The heat of the body is commonly not increased; frequently the face is pale, with a cold sweat upon it; and very often the extremities are cold, with a cold sweat over the whole body. When, however, the spasms are frequent and violent, the pulse is sometimes more full and frequent than natural; the face is flushed, and a warm sweat is forced out over the whole body.

1263. Although fever be not a constant attendant of this disease, especially when arising from a lesion of nerves; yet, in those cases proceeding from cold, a fever sometimes has supervened, and is said to have been attended with inflammatory symptoms. Blood has been often drawn in this disease, but it never exhibits any inflammatory crust; and all accounts seem to agree, that the blood drawn seems to be of a looser texture than ordinary, and that it does not coagulate in the usual manner.

1264. In this disease the head is seldom affected with delirium, or even confusion of thought, till the last stage of it; when, by the repeated shocks of a violent distemper, every function of the system is greatly disordered.

1265. It is no less extraordinary, that, in this violent disease, the natural functions are not either immediately or considerably affected. Vomitings sometimes appear early in the disease, but commonly they are not continued; and it is usual enough for the appetite of hunger to remain through the whole course of the disease; and what food happens to be taken down, seems to be regularly enough digested. The excretions are sometimes affected, but not always. The urine is sometimes suppressed, or is voided with difficulty and pain. The belly is costive: but as we have hardly any accounts, excepting of those cases in which opiates have been largely employed, it is uncertain whether the costiveness has been the effect of the opiates or of the disease. In several instances of this disease, a miliary eruption has appeared upon the skin; but whether this be a symptom of the disease, or the effect of a certain treatment of it, is undetermined. In the mean while, it has not been observed to denote either safety or danger, or to have any effect in changing the course of the distemper.

1266. This disease has generally proved fatal; and this indeed may be justly supposed to be the consequence of its nature: but, as we know that, till very lately, physicians were not well acquainted with a proper method of cure; and that, since a more proper method has been known and practised, many have recovered from this disease; it may be therefore concluded, that the fatal tendency of it is not so unavoidable as has been imagined.

In judging of the tendency of this disease, in particular cases, we may remark, that, when arising from lesions of the nerves, it is commonly more violent, and of more difficult cure, than when proceeding from cold; that the disease which comes on suddenly, and advances quickly to a violent degree, is always more dangerous than that which is slower in its progress. Accordingly, the disease often proves fatal before the fourth day; and, when a patient has passed this period, he may be supposed to be in great safety, and in general the disease is the safer the onger it has continued. It is, however, to be particularly observed, that, even for many days after the fourth, the disease continues to be dangerous; and, even after some considerable abatement of its force, it is ready to recur again with its former violence and danger. It never admits of any sudden, or what may be called a critical solution, but always recedes by degrees nly, and it is often very long before the whole of the symptoms isappear.

1267. From the history of the disease now described, it will e evident, that there is no room for distinguishing the *tetanus*, *pisthotonos*, and *trismus* or *locked jaw*, as different species of his disease, since they all arise from the same causes, and are most constantly conjoined in the same person. I have no doubt hat the *emprosthotonos* belongs also to the same genus; and as the ancients have frequently mentioned it, we can have no doubt of its having occurred: but, at the same time, it is certainly in these days a rare occurrence; and, as I have never seen it, nor find any histories in which this particular state of the spasms is said to have prevailed, I cannot mention the other circumstances which particularly attend it, and may distinguish it from the other varieties of tetanic complaints.

1268. This disease has put on still a different form from any of those above mentioned. The spasms have been sometimes confined to one side of the body only, and which bend it strongly to that side. This is what has been named by Sauvages the *Tetanus Lateralis*, and by some late writers the *Pleurosthotonos*. This form of the disease has certainly appeared very seldom; and, in any of the accounts given of it, I cannot find any circumstances that would lead me to consider it as any other than a variety of the species already mentioned, or to take further notice of it here.

1269. The pathology of this disease I cannot in any measure attempt, as the structure of moving fibres, the state of them under different degrees of contraction, and particularly the state of the sensorium, as variously determining the motion of the nervous power, are all matters very imperfectly, or not at all known to me. In such a situation, therefore, the endeavouring to give any rules of practice, upon a scientific plan, appears to be vain and fruitless; and towards directing the cure of this disease, we must be satisfied with having learned something useful from analogy confirmed by experience.

1270. When the disease is known to arise from the lesion of a nerve in any part of the body, the first, and, as I judge, the most important step to be taken towards the cure, is, by every possible means to cut off that part from all communication with the sensorium, either by cutting through the nerves in their course, or perhaps by destroying, to a certain length, their affected part or extremity.

1271. When the cure of the disease is to be attempted by medicine, experience has taught us that opium has often proved an effectual remedy; but that, to render it such, it must be given in much larger quantities than have been employed in any other case; and in these larger quantities it may, in this disease, be given more safely than the body has been known to bear in any other condition. The practice has been, to give the opium either in a solid or a liquid form, not in any very large dose at once, but in moderate doses, frequently repeated, at the interval of one, two, three, or more hours, as the violence of the symptoms seems to require. Even when large quantities have been given in this way, it appears that the opium does not operate here in the same manner as in most other cases; for, though it procure some remission of the spasms and pains, it hardly induces any sleep, or occasions that stupor, intoxication, or delirium, which it often does in other circumstances, when much smaller quantities only have been given. It is therefore very properly observed, that, in tetanic affections, as the opium shows none of those effects by which it may endanger life, there is little or no reason for being sparing in the exhibition of it; and it may be given, probably should be given, as largely and as fast as the symptoms of the disease may seem to demand.

It is particularly to be observed, that though the first exhibitions of the opium may have produced some remission of the symptoms, yet the effects of opium do not long continue in the system; and this disease being for some time ready to recur, it is commonly very necessary, by the time that the effects of the opium given may be supposed to be wearing off, and especially upon the least appearance of a return of the spasms, to repeat the exhibition of the opium in the same quantities as before. This practice is to be continued while the disease continues to show any disposition to return; and it is only after the disease has already subsisted for some time, and when considerable and long-continued remissions have taken place, that the doses of the opium may be diminished, and the intervals of exhibiting them be more considerable.

1272. The administering of opium in this manner has in many cases been successful, and probably would have been equally so in many others, if the opium had not been too sparingly employed, either from the timidity of practitioners, or from its exhibition being prevented by that interruption of deglutition which so often attends this disease. This latter circumstance directs, that the medicine should be immediately and largely employed upon the first approach of the disease, before the deglutition becomes difficult; or that, if this opportunity be lost, the medicine, in sufficient quantity, and with due frequency, should be thrown into the body by glyster; which, however, does not seem to have been hitherto often practised.

1273. It is highly probable, that, in this disease, the intestines are affected with the spasm that prevails so much in other parts of the system; and, therefore, that costiveness occurs here as a symptom of the disease. It is probably also increased by the opium, which is here so largly employed; and, from whichever of these causes it arises, it certainly must be held to aggravate the disease, and that a relaxation of the intestinal canal will contribute to a relaxation of the spasms elsewhere. This consideration directs the frequent exhibition of laxatives while the power of deglutition remains, or the frequent exhibition of glysters when it does not; and the good effects of both have been frequently observed.

1274. It has been with some probability supposed, that the operation of opium in this disease may be much assisted by joining with it some other of the most powerful antispasmodics. The most promising are musk and camphire; and some practitioners have been of opinion, that the former has proved very useful in tetanic complaints. But, whether it be from its not having been employed of a genuine kind, or in sufficient quantity, the great advantage and propriety of its use are not yet clearly ascertained. It appears to me probable, that analogous to what happens with respect to opium, both musk and camphire might be employed in this disease, in much larger quantities than they commonly have been in other cases.

1275. Warm beathing has been commonly employed as a remedy in this disease, and often with advantage; but, so far as I know, it has not alone proved a cure; and, in some cases, whether it be from the motion of the body here required, exciting the spasms, or from the fear of the bath, which some persons were seized with, I cannot determine; but it is allowed, that the warm bath hath in some cases done harm, and even occasioned death. Partial fomentations have been much commended, and, I believe, upon good grounds: And I have no doubt but that fomentations of the feet and legs, as we now usually apply them in fevers, might, without much stirring of the patient, be very assiduously employed with advantage.

1276. Unctuous applications were very frequently employed in this disease by the ancients: and some modern practitioners have considered them as very useful. Their effects, however, have not appeared to be considerable; and, as a weak auxiliary only, attended with some inconvenience, they have been very much neglected by the British practitioners.

1277. Bleeding has been formerly employed in this disease; but of late it has been found prejudicial, excepting in a few cases, where, in plethoric habits, a fever has supervened. In general, the state of men's bodies in warm climates is unfavourable to blood-letting: and, if we may form indications from the state of the blood drawn out of the veins, the state of this in tetanic diseases would forbid bleeding in them.

1278. Blistering, also, has been formerly employed in this disease; but several practitioners assert, that blisters are constantly hurtful, and they are now generally omitted.

1279. These are the practices that hithereto have been generally employed; but of late we are informed by several West-India practitioners, that in many instances they have employed mercury with great advantage. We are told, that it must be employed early in the disease; that it is most conveniently administered by unction, and should be applied in that way in large quantities, so that the body may be soon filled with it, and a salivation raised, which is to be continued till the symptoms yield. Whether this method alone be generally sufficient for the cure of the disease, or if it may be assisted by the use of opium, and require this in a certain measure to be joined with it, I have not yet certainly learned.

1280. I have been further informed, that the Tetanus, in all its different degrees, has been cured by giving internally the Pisselæum Barbadense, or, as it is vulgarly called, the Barbadoes Tar. I think it proper to take notice of this here, although I am not exactly informed what quantities of this medicine are to be given, or in what circumstances of the disease it is most properly to be employed.

1280. In the former edition of this work, among the remedies of tetanus I did not mention the use of cold bathing; because, though I had heard of this, I was not informed of such frequent employment of it as might confirm my opinion of its general efficacy; nor was I sufficiently informed of the ordinary and proper administration of it. But now, from the information of many judicious practitioners who have frequently employed it, I can say, that it is a remedy which in numerous trials has been found to be of great service in this disease; and that, while the use of the ambiguous remedy of warm bathing is entirely laid aside, the use of cold bathing is over the whole of the West Indies commonly employed. The administration of it is sometimes by bathing the person in the sea, or more frequently by throwing cold water from a bason or bucket upon the patient's body, and over the whole of it: when this is done, the body is carefully wiped dry, wrapped in blankets, and laid abed, and at the same time a large dose of an opiate is given. By these means a considerable remission of the symptoms is obtained; but this remission at first does not commonly remain long, but returning again in a few hours, the repetition both of the bathing and the opiate becomes necessary. By these repetitions, however, longer intervals of ease are obtained, and at length the disease is entirely cured; and this even happens sometimes very quickly. I have only to add, that it does not appear to me, from any accounts I have yet had, that the cold bathing has been so frequently employed, or has been found so commonly successful in the cases of tetanus in consequence of wounds, as in those from the application of cold.

1281. Before concluding this chapter, it is proper for me to take some notice of that peculiar case of the tetanus, or trismus, which attacks certain infants soon after their birth, and has been properly enough named the Trismus Nascentium. From the subjects it affects, it seems to be a peculiar disease; for these are infants not above two weeks, and commonly before before they are nine days old; insomuch that, in countries where the disease is frequent, if children pass the period now mentioned, they are considered as secure against its attacks. The symptom of it chiefly taken notice of, is the trismus or locked jaw, which is by the vulgar improperly named the Falling of the Jaw. But this is not the only symptom, as, for the most part, it has all the same symptoms as the Opisthotonos and Tetanus strictly so called, and which occur in the other varieties of tetanic complaints above described. Like the other varieties of tetanus, this is most frequent in warm climates; but is not, like those arising from the application of cold, entirely confined to such warm climates, as instances of it have occurred in most of the northern countries of Europe. In these latter it seems to be more frequent in certain districts than in others; but in what manner limited, I cannot determine. It seems to be more frequent in Switzerland than in France. I am informed of its frequently occurring in the Highlands of Scotland; but I have never met with any instance of it in the low country. The particular causes of it are not well known; and various conjectures have been offered; but none of them are satisfying. It is a disease that has been almost constantly fatal; and this, also, commonly in the course of a few days. The women are so much persuaded of its inevitable fatality, that they seldom or never call for the assistance of our art. This has occasioned our being little acquainted with the history of the disease, or with the effects of remedies in it. Analogy, however, would lead us to employ the same remedies that have proved useful in the other cases of tetanus; and the few experiments that are yet recorded, seem to approve of such a practice.

CHAP. II.

OF EPILEPSY.

G. LII. Epilepsia.—*Musculorum convulsio cum sopore.*

Sp. 1. *Epilepsia (cerebralis) sine causa manifesta subito adoriens; prægressa nulla sensatione molesta, nisi fortassis vertiginis vel Scotomiæ alicujus.*

Sp. 2. *Epilepsia (sympatica) sine causa manifesta; sed prægressa sensatione auræ cujusdam a parte corporis quadam versus caput assurgentis.*

Sp. 3. *Epilepsia (occasionalis) ab irritatione manifesta oriens, et ablata irratione cessans.*

1282. In what sense I use the term *Convulsion*, I have explained above in 1256.

The convulsions that affect the human body are in several respects various; but I am to consider here only the chief and most frequent form in which they appear, and which is in the disease named *Epilepsy*. This may be defined, as consisting in convulsions of the greater part of the muscles of voluntary motion, attended with a loss of sense, and ending in a state of insensibility, and seeming sleep.

1283. The general form or principal circumstances of this disease, are much the same in all the different persons whom it affects. It comes by fits, which often attack persons seemingly in perfect health; and, after lasting for some time, pass off, and leave the persons again in their usual state. These fits are sometimes preceded by certain symptoms, which to persons who have before experienced such a fit, may give notice of its approach as we shall hereafter explain; but even these preludes do not commonly occur long before the formal attack, which in most cases comes on suddenly without any such warning.

The person attacked loses suddenly all sense and power of motion; so that, if standing, he falls immediately, or perhaps, with convulsions, is thrown to the ground. In that situation he is agitated with violent convulsions, variously moving his limbs and the trunk of his body. Commonly the limbs on one side of the body are more violently or more considerably agitated than those upon the other. In all cases the muscles of the face and eyes are much affected, exhibiting various and violent distortions of the countenance. The tongue is often affected, and thrust out of the mouth; while the muscles of the lower jaw are also affected; and, shutting the mouth with violence while the tongue is thrust out between the teeth, that is often grievously wounded.

While these convulsions continue, there is commonly at the same time a frothy moisture issuing from the mouth. These convulsions have for some moments some remissions, but are suddenly again renewed with great violence. Generally, after no long time, the convulsions cease altogether; and the person for some time remains without motion, but in a state of absolute insensibility, and under the appearance of a profound sleep. After some continuance of this seeming sleep, the person sometimes suddenly, but for the most part by degrees only, recovers his senses and power of motion; but without any memory of what had passed from his being first seized with the fit. During the convulsions, the pulse and respiration are hurried and irregular; but, when the convulsions cease, they return to their usual regularity and healthy state.

This is the general form of the disease; and it varies only in different persons, or on different occasions in the same person, by the phenomena mentioned being more or less violent, or by their being of longer or shorter duration.

1284. With respect to the proximate cause of this disease, I might say, that it is an affection of the energy of the brain, which, ordinarily under the direction of the will, is here, without any concurrence of it, impelled by preternatural causes. But I could go no further: For, as to what is the mechanical condition of the brain in the ordinary exertions of the will, I have no distinct knowledge; and therefore must be also ignorant of the preternatural state of the same energy of the brain under the irregular motions here produced. To form, therefore, the indications of a cure, from a knowledge of the proximate cause of this disease, I must not attempt; but, from a diligent attention to the remote causes which first induce and occasionally excite the disease, I think we may often obtain some useful directions for its cure. It shall therefore be my business now, to point out and enumerate these remote causes as well as I can.

1285. The remote causes of epilepsy may be considered as occasional or predisponent. There are, indeed, certain remote causes which act independently of any predisposition; but, as we cannot always distinguish these from the others, I shall consider the whole under the usual titles of *Occasional* or *Predisponent*.

1286. The occasional causes may, I think, be properly referred to two general heads; the *first* being of those which seem to act by directly stimulating and exciting the energy of the brain; and the *second*, of those which seem to act by weakening the same. With respect to both, for the brevity of expressing a fact, without meaning to explain the manner in which it is brought about, I shall use the terms of *Excitement* and *Collapse*. And though it be true, that with respect to some of the causes I am to mention, it may be a little uncertain whether they act in the one way or the other, that does not render it improper for us to mark, with respect to others, the mode of their operating wherever we can do it clearly, as the doing so may often be of use in directing our practice.

1287. First, then, of the occasional causes acting by excitement: They are either such as act immediately and directly upon the brain itself; or those which are first applied to the other parts of the body, and are from thence communicated to the brain.

1288. The causes of excitement immediately and directly applied to the brain, may be referred to the four heads of, 1. Mechanical Stimulants; 2. Chemical Stimulants; 3. Mental Stimulants; and, 4. The peculiar Stimulus of Over-distention.

1289. The mechanical stimulants may be, wounding instruments penetrating the cranium, and entering the substance of the brain; or splinters of a fractured cranium, operating in the same manner; or sharp-pointed ossifications, either arising from the internal surface of the cranium, or formed in the membranes of the brain.

1290. The chemical stimulants (1288.) may be fluids from various causes lodged in certain parts of the brain, and become acrid by stagnation or otherwise.

1291. The mental irritations acting by excitement, are, all violent emotions of the active kind, such as joy and anger. The first of these is manifestly an exciting power, acting strongly, and immediately, on the energy of the brain. The second is manifestly, also, a power acting in the same manner. But it must be remarked, that it is not in this manner alone anger produces its effects: for it acts, also, strongly on the sanguiferous system, and may be a means of giving the stimulus of over-distention; as, under a fit of anger, the blood is impelled into the vessels of the head with violence, and in a larger quantity.

1292. Under the head of Mental Irritations, is to be mentioned the sight of persons in a fit of epilepsy, which has often produced a fit of the like kind in the spectator. It may, indeed, be a question, Whether this effect be imputable to the horror produced by a sight of the seemingly painful agitations of the limbs, and of the distortions in the countenance of the epileptic person; or if it may be ascribed to the force of imitation merely? It is possible, that horror may sometimes produce the effect: but certainly much may be imputed to that propensity to imitation, at all times so powerful and prevalent in human nature, and so often operating in other cases of convulsive disorders, which do not present any spectacle of horror.

1293. Under the same head of Mental Irritation, I think proper to mention as an instance of it, the Epilepsia Simulata, or the Feigned Epilepsy, so often taken notice of. Although this, at first, may be entirely feigned, I have no doubt but that the repetition renders it at length real. The history of Quietism and of Exorcisms leads me to this opinion; and which receives a confirmation from what we know of the power of imagination, in renewing epileptic and hysteric fits.

1294. I come now to the fourth head of the irritations applied immediately to the brain, and which I apprehend to be that of the over-distention of the blood-vessels in that organ. That such a cause operates in producing epilepsy, is probable from this, that the dissection of persons dead of epilepsy has commonly discovered the marks of a previous congestion in the blood-vessels of the brain. This, perhaps, may be supposed the effect of the fit which proved fatal: but that the congestion was previous thereto, is probable from the epilepsy being so often joined with headach, mania, palsy, and apoplexy: all of them diseases depending upon a congestion in the vessels of the brain. The general opinion receives also confirmation from this circumstance, that in the brain of persons dead of epilepsy, there have been often found tumours and effusions, which, though seemingly not sufficient to produce those diseases which depend on the compression of a considerable portion of the brain, may, however, have been sufficient to compress so many vessels as to render the others, upon any occasion, of a more than usual turgescence, or impulse of the blood into the vessels of the brain more liable to an over-distention.

1295. These considerations alone might afford foundation for a probable conjecture with respect to the effects of over-distention. But the opinion does not rest upon conjecture alone. That it is also founded in fact, appears from hence, that a plethoric state is favourable to epilepsy; and that every occasional turgescence, or unusual impulse of the blood into the vessels of the brain, such as a fit of anger, the heat of the sun, or of a warm chamber, violent exercise, a surfeit, or a fit of intoxication, are frequently the immediately exciting causes of epileptic fits.

1296. I venture to remark further, that a piece of theory may be admitted as a confirmation of this doctrine. As I have formerly maintained, that a certain fulness and tension of the vessels of the brain is necessary to the support of its ordinary and constant energy, in the distribution of the nervous power; so it must be sufficiently probable, that an over-distention of these blood-vessels may be a cause of violent excitement.

1297. We have now enumerated the several remote or occasional causes of epilepsy, acting by excitement, and acting immediately upon the brain itself. Of the causes acting by excitement, but acting upon other parts of the body, and from thence communicated to the brain, they are all of them impressions producing an exquisite or high degree either of pleasure or pain.

Impressions which produce neither the one nor the other, have hardly any such effects; unless when such impressions are in a violent degree, and then their operation may be considered as a mode of pain. It is, however, to be remarked, that all strong impressions which are sudden and surprising, or, in other words, unforeseen and unexpected, have frequently the effect of bringing on epileptic fits.

1298. There are certain impressions made upon different parts of the body, which, as they often operate without producing any sensation, so it is uncertain to what head they belong: but it is probable that the greater part of them act by excitement, and therefore fall to be mentioned here. The chief instances are, The teething of infants; worms; acidity or other acrimony in the alimentary canal; calculi in the kidneys; acrid matter in abscesses or ulcers; or acrimony diffused in the mass of blood, as in the case of some contagions.

1299. Physicians have found no difficulty in comprehending how direct stimulants of a certain force may excite the action of the brain, and occasion epilepsy; but they have hitherto taken little notice of certain causes which manifestly weaken the energy of the brain, and act, as I speak, by collapse. These, however, have the effect of exciting the action of the brain in such a manner as to occasion epilepsy. I might, upon this subject, speak of the *vis medicatrix naturæ;* and there is a foundation for the term: but, as I do not admit the Stahlian doctrine of an administering soul, I make use of the term only as expressing a fact, and would not employ it with the view of conveying any explanation of the manner in which the powers of collapse mechanically produce their effects. In the mean time, however, I maintain, that there are certain powers of collapse, which in effect prove stimulants, and produce epilepsy.

1300. That there are such powers, which may be termed indirect Stimulants, I conclude from hence, that several of the causes of epilepsy are such as frequently produce syncope, which we suppose always to depend upon causes weakening the energy of the brain (1176.) It may give some difficulty to explain, why the same causes sometimes occasion syncope, and sometimes occasion the reaction that appears in epilepsy; and I shall not attempt to explain it: but this, I think, does not prevent my supposing that the operation of these causes is by collapse. That there are such causes producing epilepsy, will, I think, appear very clearly from the particular examples of them I am now to mention.

1301. The first to be mentioned, which I suppose to be of this kind, is hæmorrhagy, whether spontaneous or artificial. That the same hæmorrhagy which produces syncope, often at the same time produces epilepsy, is well known; and from many experiments and observations it appears, that hæmorrhagies occurring to such a degree as to prove mortal, seldom do so without first producing epilepsy.

1302. Another cause acting, as I suppose, by collapse, and therefore sometimes producing syncope and sometimes epilepsy, is terror; that is, the fear of some great evil suddenly presented. As this produces at the same time a sudden and considerable emotion (1180.), so it more frequently produces epilepsy than syncope.

1303. A third cause acting by collapse, and producing epilepsy, is horror; or a strong aversion suddenly raised by a very disagreeable sensation, and frequently arising from a sympathy with the pain or danger of another person. As horror is often a cause of syncope, there can be no doubt of its manner of operating in producing epilepsy; and it may perhaps be explained upon this general principle, That as desire excites action and gives activity, so aversion restrains from action, that is, weakens the energy of the brain; and, therefore, that the higher degrees of aversion may have the effects of producing syncope or epilepsy.

1304. A fourth set of the causes of epilepsy, which I suppose also to act by collapse, are certain odours, which occasion ither syncope or epilepsy; and, with respect to the former, I have given my reasons (1182.) for supposing odours in that case o act rather as disagreeable than as sedative. These reasons will, I think, also apply here; and perhaps the whole affair of dours might be considered as instances of the effect of horror, nd therefore belonging to the last head.

1305. A fifth head of the causes producing epilepsy by collapse, is the operation of many substances considered, and for the most part properly considered, as poisons. Many of these, before they prove mortal, occasion epilepsy. This effect, indeed, may in some cases be referred to the inflammatory operation which they sometimes discover in the stomach and other parts of the alimentary canal; but, as the greater part of the vegetable poisons show chiefly a narcotic, or strongly sedative power, it is probably by this power that they produce epilepsy, and therefore belong to this head of the causes acting by collapse.

1306. Under the head of the remote causes producing epilepsy, we must now mention that peculiar one whose operation is accompanied with what is called the *Aura Epileptica*. This is a sensation of something moving in some part of the limbs or trunk of the body, and from thence creeping upwards to the head; and when it arrives there, the person is immediately deprived of sense, and falls into an epileptic fit. This motion is described by the persons feeling it sometimes as a cold vapour, sometimes as a fluid gliding, and sometimes as the sense of a small insect creeping along their body; and very often they can give no distinct idea of their sensation, otherwise than as in general, of something moving along. This sensation might be supposed to arise from some affection of the extremity or other part of a nerve acted upon by some irritating matter; and that the sensation, therefore, followed the course of such a nerve: but I have never found it following distinctly the course of any nerve; and it generally seems to pass along the teguments. It has been found in some instances to arise from something pressing upon or irritating a particular nerve, and that sometimes in consequence of contusion or wound: but instances of these are more rare; and the more common consequence of contusions and wounds is a tetanus. This latter effect wounds produce, without giving any sensation of an aura, or other kind of motion proceeding from the wounded part to the head; while, on the other hand, the aura producing epilepsy often arises from a part which had never before been affected with wound or contusion, and in which part the nature of the irritation can seldom be discovered.

It is natural to imagine that this aura epileptica is an evidence of some irritation or direct stimulus acting in the part, and from thence communicated to the brain, and should therefore have been mentioned among the causes acting by excitement; but the remarkable difference that occurs in seemingly like causes producing tetanus, gives some doubt on this subject.

1307. Having now enumerated the occasional causes of epilepsy, I proceed to consider the predisponent. As so many of the above-mentioned causes act upon certain persons, and not at all upon others, there must be supposed in those persons a predisposition to this disease: But in what this predisposition consists, is not to be easily ascertained.

1308. As many of the occasional causes are weak impressions, and are applied to most persons with little or no effect, I conclude, that the persons affected by those causes are more easily noved than others; and therefore that, in this case, a certain nobility gives the predisposition. It will, perhaps, make this natter clearer, to show, in the first place, that there is a greatr mobility of constitution in some persons than in others.

1309. This mobility appears most clearly in the state of the ind. If a person is readily elated by hope, and as readily deressed by fear, and passes easily and quickly from the one state the other; if he is easily pleased, and prone to gaiety, and s easily provoked to anger, and rendered peevish; if liable, om slight impressions, to strong emotions, but tenacious of one; this is the boyish temperament, *qui colligit ac ponit iram mere, et mutatur in horas;* this is the *varium et mutabile emina;* and, both in the boy and woman, every one perceives id acknowledges a mobility of mind. But this is necessarily nnected with an analogous state of the brain; that is, with a obility, in respect of every impression, and therefore liable to ready alternation of excitement and collapse, and of both to a nsiderable degree.

1310. There is, therefore, in certain persons, a mobility of constitution, generally derived from the state of original stamina, and more exquisite at a certain period of life than at others; but sometimes arising from, and particularly modified by occurrences in the course of life.

1311. This mobility consists in a greater degree of either sensibility or irritability. These conditions, indeed, physicians consider as so necessarily connected, that the constitution, with respect to them, may be considered as one and the same: but I am of opinion that they are different; and that mobility may sometimes depend upon an increase of the one, and sometimes on that of the other. If an action excited is, by repetition, rendered more easily excited, and more vigorously performed, I consider this as an increase of irritability only. I go no further on this subject here, as it was only necessary to take notice of the case just now mentioned, for the purpose of explaining why epilepsy, and convulsions of all kinds, by being repeated, are more easily excited, readily become habitual, and are therefore of more difficult cure.

1312. However we may apply the distinction of sensibility and irritability, it appears that the mobility, which is the predisponent cause of epilepsy, depends more particularly upon debility, or upon a plethoric state of the body.

1313. What share debility, perhaps by inducing sensibility, has in this matter, appears clearly from hence, that children, women, and other persons of manifest debility, are the most frequent subjects of this disease.

1314. The effects of a plethoric state in disposing to this disease appears from hence, that plethoric persons are frequently the subjects of it; that it is commonly excited, as I have said above, by the causes of any unusual turgescence of the blood; and that it has been frequently cured by diminishing the plethoric state of the body.

That a plethoric state of the body should dispose to this disease, we may understand from several considerations. 1*st*, Because a plethoric state implies, for the most part, a laxity of the solids, and therefore some debility in the moving fibres. *2dly*, Because, in a plethoric state, the tone of the moving fibres depends more upon their tension, than upon their inherent power: and as their tension depends upon the quantity and impetus of the fluids in the blood-vessels, which are very changeable, and by many causes frequently changed, so these frequent changes must give a mobility to the system. *3dly*, Because a plethoric state is favourable to a congestion of blood in the vessels of the brain, it must render these more readily affected by every general turgescence of the blood in the system, and therefore more especially dispose to this disease.

1315. There is another circumstance of the body disposing to epilepsy, which I cannot so well account for; and that is, the state of sleep: but whether I can account for it or not, it appears, in fact, that this state gives the disposition I speak of; for, in many persons liable to this disease, the fits happen only in the time of sleep, or immediately upon the persons coming out of it. In a case related by De Haen, it appeared clearly, that the disposition to epilepsy depended entirely upon the state of the body in sleep.

1316. Having thus considered the whole of the remote causes of epilepsy, I proceed to treat of its cure, as I have said it is from the consideration of those remote causes only, that we can obtain any directions for our practice in this disease.

I begin with observing, that as the disease may be considered as sympathic or idiopathic, I must treat of these separately, and judge it proper to begin with the former.

1317. When this disease is truly sympathic, and depending upon a primary affection in some other part of the body, such as acidity or worms in the alimentary canal, teething, or other similar causes, it is obvious, that such primary affections must be removed for the cure of the epilepsy; but it is not our business here to say how these primary diseases are to be treated.

1318. There is, however, a peculiar case of sympathic eplepsy; that is, the case accompanied with the *aura epileptica*, as described in 1306. in which, though we can perceive by the *aura epileptica* arising from a particular part, that there is some affection in that part; yet, as in many such cases we cannot perceive of what nature the affection is, I can only offer the following general directions.

1*st*, When the part can with safety be entirely destroyed, we should endeavour to do so by cutting it out, or by destroying it by the application of an actual or potential cautery.

2*dly*, When the part cannot be properly destroyed, that we should endeavour to correct the morbid affection in it by blistering, or by establishing an issue upon the part.

3*dly*, When these measures cannot be executed, or do not succeed, if the disease seems to proceed from the extremity of a particular nerve which we can easily come at in its course, it will be proper to cut through that nerve, as before proposed on the subject of tetanus.

4*thly*, When it cannot be perceived that the *aura* arises from any precise place or point, so as to direct to the above-mentioned operations; but, at the same time, we can perceive its progress along the limb; it frequently happens that the epilepsy can be prevented by a ligature applied upon the limb, above the part from which the *aura* arises: and this is always proper to be done, both because the preventing a fit breaks the habit of the disease, and because the frequent compression renders the nerves less fit to propagate the *aura*.

1319. The cure of idiopathic epilepsy, as I have said above, is to be directed by our knowledge of the remote causes. There are therefore two general indications to be formed: The first is, to avoid the occasional causes; and the second is, to remove or correct the predisponent.

This method, however, is not always purely palliative; as in many cases the predisponent may be considered as the only proximate cause, so our second indication may be often considered as properly curative.

1320. From the enumeration given above, it will be manifest, that for the most part the occasional causes, so far as they are in our power, need only to be known, in order to be avoided; and the means of doing this will be sufficiently obvious. I shall here, therefore, offer only a few remarks.

1321. One of the most frequent of the occasional causes is that of over-distention (1314.), which, so far as it depends upon a plethoric state of the system, I shall say hereafter how it is to be avoided. But as, not only in the plethoric, but in every moveable constitution, occasional turgescence is a frequent means of exciting epilepsy, the avoiding therefore of such turgescence is what ought to be most constantly the object of attention to person liable to epilepsy.

1322. Another of the most frequent exciting causes of this disease are, all strong impressions suddenly made upon the senses; for as such impressions, in moveable constitutions, break in upon the usual force, velocity, and order of the motions of the nervous system, they thereby readily produce epilepsy. Such impressions, therefore, and especially those which are suited to excite any emotion or passion of the mind, are to be most carefully guarded against by persons liable to epilepsy.

1323. In many cases of epilepsy, where the predisponent cause cannot be corrected or removed, the recurrence of the disease can only be prevented by the strictest attention to avoid the occasional; and as the disease is often confirmed by repetition and habit, so the avoiding the frequent recurrence of it is of the utmost importance towards its cure.

These are the few remarks I have to offer with respect to the occasional causes; and must now observe, that, for the most part, the complete, or as it is called, the Radical Cure, is only to be obtained by removing or correcting the predisponent cause.

1324. I have said above, that the predisponent cause of epilepsy is a certain mobility of the sensorium; and that this depends upon a plethoric state of the system, or upon a certain state of debility in it.

1325. How the plethoric state of the system is to be corrected, I have treated of fully above in 783. *et seq.* and I need not repeat it here. It will be enough to say, that it is chiefly to be done by a proper management of exercise and diet; and, with respect to the latter, it is particularly to be observed here, that an abstemious course has been frequently found to be the most certain means of curing epilepsy.

1326. Considering the nature of the matter poured out by issues, these may be supposed to be a constant means of obviating the plethoric state of the system; and it is perhaps therefore that they have been so often found useful in epilepsy. Possibly also, as an open issue may be a means of determining occasional turgescences to such places, and therefore of diverting them in some measure from their action upon the brain; so, also, in this manner, issues may be useful in epilepsy.

1327. It might be supposed that blood-letting would be the most effectual means of correcting the plethoric state of the system; and such it certainly proves when the plethoric state has become considerable, and immediately threatens morbid effects. It is therefore, in such circumstances, proper and necessary; but as we have said above, that blood-letting is not the proper means of obviating a recurrence of the plethoric state, and, on the contrary, is often the means of favouring it; so it is a remedy not advisable in every circumstance of epilepsy. There is, however, a case of epilepsy in which there is a periodical or occasional recurrence of the fulness and turgescence of the sanguiferous system, giving occasion to a recurrence of the disease. In such cases, when the means of preventing plethora have been neglected, or may have proved ineffectual, it is absolutely necessary for the practitioner to watch the returns of these turgescences, and to obviate their effects by the only certain means of doing it, that is, by a large blood-letting.

1328. The second cause of mobility which we have assigned, is a state of debility. If this is owing, as it frequently is, to original conformation, it is perhaps not possible to cure it; but when it has been brought on in the course of life, it possibly may admit of being mended; and in either case, much may be done to obviate and prevent its effects.

1329. The means of correcting debility, so far as it can be done, are, The person's being much in cool air; the frequent use of cold bathing; the use of exercise, adapted to the strength and habits of the person; and perhaps the use of astringent and tonic medicines.

These remedies are suited to strengthen the inherent power of the solids or moving fibres; but as the strength of these depends also upon their tension, so when debility has proceeded from inanition, the strength may be restored, by restoring the ulness and tension of the vessels by a nourishing diet; and we ave had instances of the propriety and success of such a pracice.

1330. The means of obviating the effects of debility, and of he mobility depending upon it, are the use of tonic and antipasmodic remedies.

The tonics are, Fear, or some degree of terror; astringents; ertain vegetable and metallic tonics; and cold bathing.

1331. That fear, or some degree of terror, may be of use in reventing epilepsy, we have a remarkable proof in Boerhaave's ure of the epilepsy, which happened in the Orphan-house at Haerlem. See Kauu Boerhaave's treatise, entitled *Impetum Faciens*, § 406. And we have met with several other instances of he same.

As the operation of horror is in many respects analogous to hat of terror, several seemingly superstitious remedies have een employed for the cure of epilepsy; and, if they have ever een successful, I think it must be imputed to the horror they ad inspired.

1332. Of the astringent medicines used for the cure of epipsy, the most celebrated is the *viscus quercinus*, which, when iven in large quantities, may possibly be useful; but I believe was more especially so in ancient times, when it was an object of superstition. In the few instances in which I have seen it employed, it did not prove of any effect.

1333. Among the vegetable tonics, the bitters are to be reckoned; and it is by this quality that I suppose the orange-tree leaves to have been useful: but they are not always so.

1334. The vegetable tonic, which from its use in analogous cases is the most promising, is the peruvian bark; this, upon occasion, has been useful, but has also often failed. It is especially adapted to those epilepsies which recur at certain periods, and which are at the same time without the recurrence of any plethoric state, or turgescence of the blood; and in such periodical cases, if the bark is employed some time before the expected recurrence, it may be useful: but it must be given in large quantity, and as near to the time of the expected return as possible.

1335. The metallic tonics seem to be more powerful than the vegetable, and a great variety of the former have been employed.

Even arsenic has been employed in the cure of epilepsy; and its use in intermittent fevers gives an analogy in its favour.

Preparations of tin have been formerly recommended in the cure of epilepsy, and in the cure of the analogous disease of hysteria; and several considerations render the virtues of tin, with respect to these diseases, probable: but I have had no experience of its use in such cases.

A much safer metallic tonic is to be found in the preparations of iron; and we have seen some of them employed in the cure of epilepsy, but have never found them to be effectual. This, however, I think, may be imputed to their not having been always employed in the circumstances of the disease, and in the quantities of the medicine that were proper and necessary.

1336. Of the metallic tonics, the most celebrated, and the most frequently employed, is copper, under various preparation. What preparation of it may be the most effectual, I dare not determine; bnt of late the *cuprum ammoniacum* has been frequently found successful.

1337. Lately the flowers of zinc have been recommended by a great authority as useful in all convulsive disorders; but in cases of epilepsy, I have not hitherto found that medicine useful.

1338. There have been of late some instances of the cure of epilepsy by the accidental use of mercury; and if the late accounts of the cure of tetanus by this remedy are confirmed, it will allow us to think that the same may be adapted also to the cure of certain cases of epilepsy.

1339. With respect to the employment of any of the above-mentioned tonics in this disease, it must be observed, that in all cases where the disease depends upon a constant or occasional plethoric state of the system, these remedies are likely to be ineffectual; and if sufficient evacuations are not made at the same time, these medicines are likely to be very hurtful.

1340. The other set of medicines which we have mentioned as suited to obviate the effects of the too great mobility of the system, are the medicines named *antispasmodics*. Of these there is a long list in the writers on the Materia Medica, and by these authors recommended for the cure of epilepsy. The greater part, however, of those taken from the vegetable kingdom, are manifestly inert and insignificant. Even the root of the wild valerian hardly supports its credit.

1341. Certain substances taken from the animal kingdom seem to be much more powerful: and of these the chief, and seemingly the most powerful, is musk; which employed in its genuine state, and in due quantity, has often been an effectual remedy.

It is probable also, that the *oleum animale*, as it has been named, when in its purest state, and exhibited at a proper time, may be an effectual remedy.

1342. In many diseases, the most powerful antispasmodic is certainly opium; but the propriety of its use in epilepsy has been disputed among physicians. When the disease depends upon a plethoric state, in which bleeding may be necessary, he employment of opium is likely to be very hurtful; but when there is no plethoric or inflammatory state present, and the disease seems to depend upon irritation or upon increased irritability, opium is likely to prove the most certain remedy. Whatever effects in this and other convulsive disorders have been attributed to the hyoscyamus, must probably be attributed to its possessing a narcotic power similar to that of opium.

1343. With respect to the use of antispasmodics, it is to be observed, that they are always most useful, and perhaps only useful when employed at a time when epileptic fits are frequently recurring, or near to the times of the accession of fits which recur after considerable intervals.

1344. On the subject of the cure of epilepsy, I have only to add, that as the disease in many cases is continued by the power of habit only, and that in all cases habit has a great share in increasing mobility, and therefore in continuing this disease; so the breaking in upon such habit, and changing the whole habits of the system, is likely to be a powerful remedy in epilepsy. Accordingly, a considerable change of climate, diet, and other circumstances in the manner of life, has often proved a cure of this disease.

1345. After treating of epilepsy, I might here treat of particular convulsions, which are to be distinguished from epilepsy by their being more partial; that is, affecting certain parts of the body only, and by their not being attended with a loss of sense, nor ending in such a comatose state as epilepsy always does.

1346. Of such convulsive affections, many different instances have been observed and recorded by physicians. But many of these have been manifestly sympathic affections, to be cured only by curing the primary disease upon which they depend, and therefore not to be treated of here: Or, though they are such as cannot be referred to another disease, as many of them however have not any specific character with which they occur in different persons, I must therefore leave them to be treated upon the general principles I have laid down with respect to epilepsy, or shall lay down with respect to the following convulsive disorder; which, as having very constantly in different persons a peculiar character, I think necessary to treat of more particularly.

CHAP. III.

OF THE CHOREA, OR DANCE OF ST VITUS.

G. L. CHOREA.—*Impuberes utriusque sexus, ut plurimum intra decimum et decimum quartum ætatis annum adoriens, motus convulsivi ex parte voluntarii, plerumque alterius lateris, in brachiorum et manuum motu, histrionum gesticulationes referentes; in gressu, pedem alterum sæpius trahentes quam attollentes.*

1347. THIS disease affects both sexes, and almost only young persons. It generally happens from the age of ten to that of fourteen years. It comes on always before the age of puberty, and rarely continues beyond that period.

1348. It is chiefly marked by convulsive motions, somewhat varied in different persons, but nearly of one kind in all; affecting the leg and arm on the same side, and generally on one side only.

1349. These convulsive motions commonly first affect the leg and foot. Though the limb be at rest, the foot is often agitated by convulsive motions, turning it alternately outwards and inwards. When walking is attempted, the affected leg is seldom lifted as usual in walking, but is dragged along as if the whole limb were paralytic; and when it is attempted to be lifted, this motion is unsteadily performed, the limb becoming agitated by irregular convulsive motions.

1350. The arm of the same side is generally affected at the same time; and, even when no voluntary motion is attempted, the arm is frequently agitated with various convulsive motions. But especially when voluntary motions are attempted, these are not properly executed, but are variously hurried or interrupted by convulsive motions in a direction contrary to that intended. The most common instance of this is in the person's attempting to carry a cup of liquor to his mouth, when it is only after repeated efforts, interrupted by frequent convulsive retractions and deviations, that the cup can be carried to the mouth.

1351. It appears to me, that the will often yields to these convulsive motions, as to a propensity, and thereby they are often increased, while the person affected seems pleased with increasing the surprise and amusement which his motions occasion in the bystanders.

1352. In this disease the mind is often affected with some degree of fatuity; and often shows the same varied, desultory, and causeless emotions which occur in hysteria.

1353. These are the most common circumstances of this disease; but at times, and in different persons, it is varied by some difference in the convulsive motions, particularly by these affecting the head and trunk of the body. As in this disease there seem to be propensities to motion, so various fits of leaping and running occur in the persons affected; and there have been instances of this disease, consisting of such convulsive motions, appearing as an epidemic in a certain corner of the country. In such instances, persons of different ages are affected, and may seem to make an exception to the general rule above laid down; but still the persons are, for the most part, the young of both sexes, and of the more manifestly moveable constitutions.

1354. The method of curing this disease has been variously proposed. Dr Sydenham proposed to cure it by alternate bleeding and purging. In some plethoric habits I have found some bleeding useful; but in many cases I have found repeated evacuations, especially by bleeding, very hurtful.

In many cases, I have found the disease, in spite of remedies of all kinds, continue for many months; but I have also found t often readily yield to tonic remedies, such as the Peruvian bark, and chalybeates.

The late Dr De Haen found several persons labouring under this disease cured by the application of electricity.

SECT. II.—*Of the Spasmodic Affections of the Vital Functions.*

CHAP. IV*.

OF THE PALPITATION OF THE HEART.

G. LIII. PALPITATIO.—*Motus cordis vehemens, abnormis.*

1355. THE motion thus named is a contraction or systole of the heart, that is performed with more rapidity, and generally also with more force, than usual; and when at the same time the heart strikes with more than usual violence against the inside of the ribs, producing often a considerable sound.

1356. This motion or palpitation is occasioned by a great variety of causes, which have been recited with great pains by Mr Senac and others, whom, however, I cannot follow in all the particulars with sufficient discernment, and therefore sha here only attempt to refer all the several cases of this diseas to a few general heads.

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* Though I have thought it proper to divide this book into sections, I think it necessary, for the convenience of references, to number the chapters from the beginning.

1357. The first is of those arising from the application of th usual stimulus to the heart's contraction; that is, the influx of th venous blood into its cavities, being made with more velocit and therefore, in the same time, in greater quantity than usual. It seems to be in this manner that violent exercise occasions palpitation.

1358. A second head of the cases of palpitation, is of thos arising from any resistance given to the free and entire evacuation of the ventricles of the heart. Thus a ligature made upon the aorta occasions palpitations of the most violent kind. Similar resistances, either in the aorta or pulmonary artery, may be readily imagined; and such have been often found in the dead bodies of persons who, during life, had been much affected with palpitations.

To this head are to be referred all those cases of palpitation arising from causes producing an accumulation of blood in the great vessels near to the heart.

1359. A third head of the cases of palpitation, is of those arising from a more violent and rapid influx of the nervous power into the muscular fibres of the heart. It is in this manner that I suppose various causes acting in the brain, and particularly certain emotions of the mind, occasion palpitation.

1360. A fourth head of the cases of palpitation, is of those arising from causes producing a weakness in the action of the heart, by diminishing the energy of the brain with respect to it. That such causes operate in producing palpitation, I presume from hence, that all the several causes mentioned above (1177. *et seq.)*, as in this manner producing syncope, do often produce palpitation. It is on this ground that these two diseases are affections frequently occurring in the same person, as the same causes may occasion the one or the other, according to the force of the cause and mobility of the person acted upon. It seems to be a law of the human economy, that a degree of debility occurring in any function, often produces a more vigorous exertion of the same, or at least an effort towards it, and that commonly in a convulsive manner.

I apprehend it to be the convulsive action, frequently ending in some degree of a spasm, that gives occasion to the intermittent pulse so frequently accompanying palpitation.

1361. A fifth head of the cases of palpitation may perhaps be of those arising from a peculiar irritability or mobility of the heart. This, indeed, may be considered as a predisponent cause only, giving occasion to the action of the greater part of the causes recited above. But it is proper to observe, that this predisposition is often the chief part of the remote cause; insomuch that many of the causes producing palpitation would not have this effect but in persons peculiarly predisposed. This head, therefore, of the cases of palpitation, often requires to be distinguished from all the rest.

1362. After thus marking the several cases and causes of palpitation, I think it necessary, with a view to the cure of this disease, to observe, that the several causes of it may be again educed to two heads. The first is, of those consisting in, or depending upon, certain organic affections of the heart itself, r of the great vessels immediately connected with it. The seond is, of those consisting in, or depending upon, certain affections subsisting and acting in other parts of the body, and acting either by the force of the cause, or in consequence of the obility of the heart.

1363. With respect to the cases depending upon the first set causes, I must repeat here what I said with respect to the e cases of syncope, that I do not know any means of curing em. They, indeed, admit of some palliation, *first*, by avoidg every circumstance that may hurry the circulation of the ood; and, *secondly*, by every means of avoiding a plethoric te of the system, or any occasional turgescence of the blood.

In many of these cases, blood-letting may give a temporary relief: but in so far as debility and mobility are concerned, in such cases this remedy is likely to do harm.

1364. With respect to the cases depending upon the othe set of causes, they may be various, and require very differen measures: but I can here say in general, that these cases may be considered as of two kinds; one depending upon primary affections in other parts of the body, and acting by the force o the particular causes; and another depending upon a state o mobility in the heart itself. In the first of these, it is obvious that the cure of the palpitation must be obtained by curing the primary affection; which is not to be treated of here. In the second, the cure must be obtained, partly by diligently avoiding the occasional causes, partly and chiefly by correcting the mobility of the system, and of the heart in particular; for doing which we have treated of the proper means elsewhere.

CHAP. V.

OF DYSPNŒA, OR DIFFICULT BREATHING.

G. LV. DYSPNŒA.—*Spirandi difficultas perpetua, sine angustiæ, et potius cum repletionis et infarctus in pectore, sensu. Tussis per totum morbi decursum frequens.*

Sp. 1. *Dyspnœa (catarrhalis) cum tussi frequente, mucum viscidum copiosum ejiciente.*

Sp. 2. *Dyspnœa (sicca) cum tussi plerumque sicca.*

Sp. 3. *Dyspnœa (aërea) a minima quavis tempestatum mutatione aucta.*

Sp. 4. *Dyspnœa (terrea) cum tussi materiem terream vel calculosam ejiciente.*

Sp. 5. *Dyspnœa (aquosa) cum urina parca et œdemate pedum, sine fluctuatione in pectore, vel aliis characteristicis hydrothoracis signis.*

Sp. 6. *Dyspnœa (pinguedinosa) in hominibus valde obesis.*

Sp. 7. *Dyspnœa (thoracica) a partibus thoracem cingentibus læsis, vel male conformatis.*

Sp. 8. *Dyspnœa (extrinseca) a causis externis manifestis.*

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365. THE exercise of respiration, and the organs of it, have o constant and considerable a connection with almost the whole f the other functions and parts of the human body, that upon lmost every occasion of disease, respiration must be affected. ccordingly some difficulty and disorder in this function are n fact symptoms very generally accompanying disease.

1366. Upon this account the symptom of difficult breathing eserves a chief place and an ample consideration in the general system of Pathology; but what share of consideration it ought to have in a treatise of Practice, I find it difficult to determine.

1367. On this subject, it is, in the first place, necessary to distinguish between the symptomatic and idiopathic affections; that is, between those difficulties of breathing which are symptoms only of a more general affection, or of a disease subsisting primarily in other parts than the organs of respiration, and that difficulty of breathing which depends upon a primary affection of the lungs themselves. The various cases of symptomatic dyspnœa I have taken pains to enumerate in my Methodical Nosology, and it will be obvious they are such as cannot be taken notice of here.

1368. In my Nosology I have also taken pains to point out and enumerate the proper, or at least the greater part of the proper, idiopathic cases of dyspnœa; but from that enumeration it will, I think, readily appear, that few, and indeed hardly any, of these cases will admit or require much of our notice in this place.

1369. The Dyspnœa *Sicca, species* 2. the Dyspnœa *Aërea, sp.* 3. the Dyspnœa *Terrea, sp.* 4. and Dyspnœa *Thoracica, sp.* 7. are some of them with difficulty known, and are all of them diseases which in my opinion do not admit of cure. All, therefore, that can be said concerning them here is, that they may admit of some palliation; and this, I think, is to be obtained chiefly by avoiding a plethoric state of the lungs, and every circumstance that may hurry respiration.

1370. Of the Dyspnœa *Extrinseca, sp.* 8. I can say no more, but that these external causes marked in the Nosology, and perhaps some others that might have like effects, are to be carefully avoided; or, when they have been applied, and their effects have taken place, the disease is to be palliated by the means mentioned in the last paragraph.

1371. The other species, though enumerated as idiopathic, can hardly be considered as such, or as requiring to be treated of here.

The Dyspnœa *Catarrhalis*, *sp.* 1. may be considered as a species of catarrh, and is pretty certainly to be cured by the same remedies as that species of catarrh which depends rather upon the increased afflux of mucus to the bronchiæ, than upon any inflammatory state in them.

The Dyspnœa *Aquosa*, *sp.* 5. is certainly to be considered as a species of dropsy, and is to be treated by the same remedies as the other species of that disease.

The Dyspnœa *Pinguedinosa*, *sp.* 6. is in like manner to be considered as a symptom or local effect of the Polysarcia, and s only to be cured by correcting the general fault of the sysem.

1372. From this view of those idiopathic cases of dyspnœa, which are perhaps all I could properly arrange under this title, t will readily appear that there is little room for treating of hem here: but there is still one case of difficult breathing, which has been properly distinguished from every other under he title of *Asthma*; and as it deserves our particular attention, shall here separately consider it.

CHAP. VI.

OF ASTHMA.

G. LIV. ASTHMA.—*Spirandi difficultas per intervalla subiens; cum angustiæ in pectore sensu, et respiratione cum sibilo strepente; tussis sub initio paroxysmi difficilis, vel nulla, versus finem libera, cum sputo muci sæpe copioso.*

Sp. 1. *Asthma (spontaneum) sine causa manifesta, vel alio morbo comitante.*

Sp. 2. *Asthma (exanthematicum) a scabie vel alia acris effusione retropulsa.*

Sp. 3. *Asthma (plethoricum) a suppressa evacuatione sanguinis antea solita, vel a plethora spontanea.*

1373. THE term of Asthma has been commonly applied by the vulgar, and even by many writers on the Practice of Physic, to every case of difficult breathing, that is, to every species of Dyspnœa. The Methodical Nosologists, also, have distinguished Asthma from Dyspnœa chiefly, and almost solely, by the former being the same affection with the latter, but in a higher degree. Neither of these applications of the term seems to have been correct or proper. I am of opinion, that the term Asthma may be most properly applied, and should be confined, to a case of difficult breathing that has peculiar symptoms, and depends upon a peculiar proximate cause, which I hope to assign with sufficient certainty. It is this disease I am now to treat of, and it is nearly what Practical Writers have generally distinguished from the other cases of difficult breathing, by the title of Spasmodic Asthma, or of *Asthma Convulsivum*; although, by not distinguishing it with sufficient accuracy from the other cases of Dyspnœa, they have introduced a great deal of confusion into their treatises on this subject.

1374. The disease I am to treat of, or the Asthma to be strictly so called, is often a hereditary disease. It seldom appears very early in life, and hardly till the time of puberty, or after it. It affects both sexes, but most frequently the male. I have not observed it to be more frequent in one kind of temperament than in another; and it does not seem to depend upon any general temperament of the whole body, but upon a particular constitution of the lungs alone. It frequently attacks persons of a full habit; but it hardly ever continues to be repeated for some length of time without occasioning an emaciation of the whole body.

1375. The attacks of this disease are generally in the night-time, or towards the approach of night; but there are also some instances of their coming on in the course of the day. At whatever time they come on, it is for the most part suddenly, with a sense of tightness and stricture across the breast, and a sense of straitness in the lungs, impeding inspiration. The person thus attacked, if in a horizontal situation, is immediately obliged to get into somewhat of an erect posture, and requires a free and cool air. The difficulty of breathing goes on for some time increasing, and both inspiration and exspiration are performed slowly, and with a wheezing noise. In violent fits, speaking is difficult and uneasy. There is often some propensity to coughing, but it can hardly be executed.

1376. These symptoms often continue for many hours together, and particularly from midnight till the morning is far advanced. Then commonly a remission takes place by degrees; the breathing becomes less laborious and more full, so that the person can speak and cough with more ease; and, if the cough brings up some mucus, the remission becomes immediately more considerable, and the person falls into a much wished-for sleep.

1377. During these fits, the pulse often continues in its natural state; but, in some persons, the fits are attended with a frequency of pulse, and with some heat and thirst, as marks of some degree of fever. If urine be voided at the beginning of a fit, it is commonly in considerable quantity, and with little colour or odour; but, after the fit is over, the urine voided is in the ordinary quantity, of a high colour, and sometimes deposites a sediment. In some persons, during the fit, the face is a little flushed and turgid; but more commonly, it is somewhat pale and shrunk.

1378. After some sleep in the morning, the patient, for the rest of the day, continues to have more free and easy breathing, but it is seldom entirely such. He still feels some tightness across his breast, cannot breathe easily in a horizontal posture, and can hardly bear any motion of his body, without having his breathing rendered more difficult and uneasy. In the afternoon, he has an unusual flatulency of his stomach, and an unusual drowsiness; and, very frequently, these symptoms precede the first attacks of the disease. But whether these symptoms appear or not, the difficulty of breathing returns towards the evening, and then sometimes gradually increases, till it becomes as violent as in the night before; or if, during the day, the difficulty of breathing has been moderate, and the person gets some sleep in the first part of the night, he is however waked about midnight, or at some time between midnight and two o'clock in the morning, and is then suddenly seized with a fit of difficult breathing, which runs the same course as the night before.

1379. In this manner, fits return for several nights successively; but generally, after some nights passed in this way, the fits suffer more considerable remissions. This especially happens when the remissions are attended with a more copious expectoration in the mornings, and that this continues from time to time throughout the day. In these circumstances, asthmatics, for a long time after, have not only more easy days, but enjoy also nights of entire sleep, without the recurrence of the disease.

1380. When this disease, however, has once taken place, in the manner above described, it is ready to return at times for the whole of life after. These returns, however, happen with different circumstances in different persons.

1381. In some persons, the fits are readily excited by external heat, whether of the weather or of a warm chamber, and particularly by warm bathing. In such persons, fits are more frequent in summer, and particularly during the dog days, than at other colder seasons. The same persons are also readily affected by changes of the weather, especially by sudden changes made from a colder to a warmer, or, what is commonly the ame thing, from a heavier to a lighter atmosphere. The same persons are also affected by every circumstance straitening the capacity of the thorax, as by any ligature made, or even by a plaster laid upon it; and a like effect happens from any in-reased bulk of the stomach, either by a full meal, or by air ollected in it. They are likewise much affected by exercise, r whatever else can hurry the circulation of the blood.

1382. As asthmatic fits seem thus to depend upon some ful-ess of the vessels of the lungs, it is probable that an obstruc-on of perspiration, and the blood being less determined to the urface of the body, may favour an accumulation in the lungs, nd thereby be a means of exciting asthma. This seems to be he case of those asthmatics who have fits most frequently in he winter season, and who have commonly more of a catarrhal fection accompanying the asthma; which, therefore, occurs ore frequently in winter, and more manifestly from the ap-lication of cold.

1383. Beside these cases of asthma excited by heat or cold, here are others, in which the fits are especially excited by owers applied to the nervous system, as by passions of the ind, by particular odours, and by irritations of smoke and ust.

That this disease is an affection of the nervous system, and depending upon a mobility of the moving fibres of the lungs, appears pretty clearly from its being frequently connected with other spasmodic affections depending upon mobility; such as hysteria, hypochondriasis, dyspepsia, and atonic gout.

1384. From the whole of the history of asthma now delivered, I think it will readily appear, that the proximate cause of this disease is a preternatural, and in some measure a spasmodic constriction of the muscular fibres of the bronchiæ, which not only prevents the dilatation of the bronchiæ necessary to a free and full inspiration, but gives also a rigidity which prevents a full and free exspiration. This preternatural constriction, like many other convulsive and spasmodic affections, is readily excited by a turgescence of the blood, or other cause of any unusual fulness and distention of the vessels of the lungs.

1385. This disease, as coming by fits, may be generally distinguished from most other species of dyspnœa, whose causes being more constantly applied, produce, therefore, a more constant difficulty of breathing. There may, however, be some fallacy in this matter, as some of these causes may be liable to have abatements and intensities, whereby the dyspnœa produced by them may seem to come by fits; but I believe it is seldom that such fits put on the appearance of the genuine asthmatic fits described above. Perhaps, however, there is still another case that may give more difficulty; and that is, when several of the causes, which we have assigned as causes of several of the species of difficult breathing referred to the genus of Dyspnœa, may have the effect of exciting a genuine asthmatic fit. Whether this can happen to any but the peculiarly predisposed to asthma, I am uncertain; and, therefore, whether, in any such cases, the asthma may be considered as symptomatic, or if, in all such cases, the asthma may not still be considered and treated as an idiopathic disease.

1386. The asthma, though often threatening immediate death, seldom occasions it; and many persons have lived long under this disease. In many cases, however, it does prove fatal, sometimes very quickly, and perhaps always at length. In some young persons it has ended soon, by occasioning a phthisis pulmonalis. After a long continuance, it often ends in a hydrothorax; and commonly, by occasioning some aneurism of the heart or great vessels, it thereby proves fatal.

1387. As it is seldom that an asthma has been entirely cured, I therefore cannot propose any method of cure which experience has approved as generally successful. But the disease admits of alleviation in several respects from the use of remedies; and my business now shall be chiefly to offer some remarks upon the choice and use of the remedies which have been commonly employed in cases of asthma.

1388. As the danger of an asthmatic fit arises chiefly from the difficult transmission of the blood through the vessels of the lungs, threatening suffocation; so the most probable means of obviating this seems to be blood-letting; and, therefore, in all violent fits, practitioners have had recourse to this remedy. In first attacks, and especially in young and plethoric persons, blood-letting may be very necessary, and is commonly allowable. But it is also evident, that, under the frequent recurrence of fits, blood-letting cannot be frequently repeated, without exhausting and weakening the patient too much. It is further to be observed, that blood-letting is not so necessary as might be imagined, as the passage of the blood through the lungs is not so much interrupted as has been commonly supposed. This I particularly conclude from hence, that, instead of the suffusion of face, which is the usual effect of such interruption, the face, in asthmatic fits, is often shrunk and pale. I conclude the same also from this, that, in asthmatic fits, blood-letting does not commonly give so much relief as, upon the contrary supposition, might be expected.

1389. As I have alleged above, that a turgescence of the blood is frequently the exciting cause of asthmatic fits, so it might be supposed that a plethoric state of the system might have a great share in producing a turgescence of the blood in the lungs; and especially, therefore, that blood-letting might be a proper remedy in asthma. I allow it to be so in the first attacks of the disease; but as the disease, by continuing, generally takes off the plethoric state of the system; so, after the disease has continued for some time, I allege that blood-letting becomes less and less necessary.

1390. Upon the supposition of asthmatics being in a plethoric state, purging might be supposed to prove a remedy in this disease; but, both because the supposition is not commonly well founded, and because purging is seldom found to relieve the vessels of the thorax, this remedy has not appeared to be well suited to asthmatics, and large purging has always been found to do much harm. But as asthmatics are always hurt by the stagnation and accumulation of matters in the alimentary canal, so costiveness must be avoided, and an open belly proves useful. In the time of fits, the employment of emollient and moderately laxative glysters has been found to give considerable relief.

1391. As a flatulency of the stomach, and other symptoms of indigestion, are frequent attendants of asthma, and very troublesome to asthmatics; so, both for removing these symptoms, and for taking off all determination to the lungs, the frequent use of gentle vomits is proper in this disease. In certain cases, where a fit was expected to come on in the course of the night, a vomit given in the evening has frequently seemed to prevent it.

1392. Blistering between the shoulders, or upon the breast, has been frequently employed to relieve asthmatics; but in the pure spasmodic asthma we treat of here, I have rarely found blisters useful, either in preventing or relieving fits.

1393. Issues are certainly useful in obviating plethora; but as such indications seldom arise in cases of asthma, so issues have been seldom found useful in this disease.

1394. As asthmatic fits are so frequently excited by a turgescence of the blood, so the obviating and allaying of this by acids and neutral salts, seems to have been at all times the object of practitioners. See FLOYER *on the Asthma.*

1395. Although a plethoric state of the system may seem to dispose to asthma, and the occasional turgescence of the blood may seem to be frequently the exciting cause of the fits; yet it is evident, that the disease must have arisen chiefly from a peculiar constitution in the moving fibres of the bronchiæ, disposing them, upon various occasions, to fall into a spasmodic constriction; and, therefore, that the entire cure of the disease can only be expected from the correcting of that predisposition, or from correcting the preternatural mobility or irritability of the lungs in that respect.

1396. In cases wherein this predisposition depends upon original conformation, the cure must be difficult, and perhaps impossible; but it may perhaps be moderated by the use of antispasmodics. Upon this footing, various remedies of that kind have been commonly employed, and particularly the fetid gums; but we have not found them of any considerable efficacy, and have observed them to be sometimes hurtful by their heating too much. Some other antispasmodics which might be supposed powerful, such as musk, have not been properly tried. The vitriolic ether has been found to give relief, but its effects are not lasting.

1397. As in other spasmodic affections, so in this, the most certain and powerful antispasmodic is opium. I have often found it effectual, and generally safe; and if there have arisen doubts with respect to its safety, I believe they have arisen from not distinguishing between certain plethoric and inflammatory cases of dyspnœa, improperly named Asthma, and the genuine spasmodic asthma we treat of here.

1398. As in many cases this disease depends upon a predisposition which cannot be corrected by our art, so in such cases the patients can only escape the disease by avoiding the occasional or exciting causes, which I have endeavoured to point above. It is however difficult to give any general rules here as different asthmatics have their different idiosyncrasies with respect to externals. Thus one asthmatic finds himself easies living in the midst of a great city, while another cannot breath but in the free air of the country. In the latter case, however most asthmatics bear the air of a low ground, if tolerably free and dry, better than that of the mountain.

1399. In diet also, there is some difference to be made with respect to different asthmatics. None of them bear a large or full meal, or any food that is of slow and difficult solution in the stomach; but many of them bear animal food of the lighter kinds, and in moderate quantity. The use of vegetables, which readily prove flatulent, are always very hurtful. In recent asthma, and especially in the young and plethoric, a spare, light, and cool diet is proper, and commonly necessary; but after the disease has continued for years, asthmatics commonly bear, and even require a tolerably full diet, though in all cases a very full diet is very hurtful.

1400. In drinking, water, or cool watery liquors, is the only safe and fit drink for asthmatics; and all liquors ready to ferment, and become flatulent, are hurtful to them. Few asthmatics can bear any kind of strong drink; and any excess in such is always very hurtful to them. As asthmatics are commonly hurt by taking warm or tepid drink, so both upon that account, and upon account of the liquors weakening the nerves of the stomach, neither tea nor coffee is proper in this disease.

1401. Asthmatics commonly bear no bodily motion easily, but that of the most gentle kind. Riding, however, on horseback, or going in a carriage, and especially sailing, are very often useful to asthmatics.

CHAP. VII.

OF THE CHINCOUGH, OR HOOPING-COUGH.

G. LVI. PERTUSSIS.—*Morbus contagiosus; tussis convulsiva, strangulans, cum inspiratione sonora, iterata; sæpe vomitus.*

1402. THIS disease is commonly epidemic, and manifestly contagious. It seems to proceed from a contagion of a specific nature, and of singular quality. It does not, like most other contagions, necessarily produce a fever; nor does it, like most others, occasion any eruption, or produce otherwise any evident change in the state of the human fluids. It has, in common with the catarrhal contagion, and with that of the measles, a peculiar determination to the lungs, but with particular effects there, very different from those of the other two; as will appear from the history of this disease now to be delivered.

1403. This contagion, like several others, affects persons but once in the course of their lives; and therefore, necessarily, children are most commonly the subjects of this disease: but there are many instances of it occurring in persons considerably advanced in life, though it is probable, that the farther that persons are advanced in life, they are the less liable to be affected with this contagion.

1404. The disease commonly comes on with the ordinary symptoms of a catarrh arising from cold; and often, for many days, keeps entirely to that appearance; and I have had instances of a disease which, though evidently arising from the chincough contagion, never put on any other form than that of a common catarrh.

This however seldom happens; for generally in the second, and at farthest in the third week after the attack, the disease puts on its peculiar and characteristic symptom, a convulsive cough. This is a cough in which the exspiratory motions peculiar to coughing are made with more frequency, rapidity, and violence, than usual. As these circumstances, however, in different instances of coughing, are in very different degrees; so no exact limits can be put to determine when the cough can be strictly said to be convulsive; and it is therefore especially by another circumstance that the chincough is distinguished from every other form of cough. This circumstance is, when many exspiratory motions have been convulsively made, and thereby the air is in great quantity thrown out of the lungs, a full inspiration is necessarily and suddenly made; which, by the air rushing in through the glottis with unusual velocity, gives a peculiar sound. This sound is somewhat different in different cases, but is in general called a Hoop; and from it the whole of the disease is called the Hooping-Cough. When this sonorous inspiration has happened, the convulsive coughing is again renewed, and continues in the same manner as before, till a quantity of mucus is thrown up from the lungs, or the contents of the stomach are thrown up by vomiting. Either of these evacuations commonly puts an end to the coughing, and the patient remains free from it for some time after. Sometimes it is only after several alternate fits of coughing and hooping that expectoration or vomiting takes place; but it is commonly after the second coughing that these happen, and put an end to the fit.

1405. When the disease, in this manner, has taken its proper form, it generally continues for a long time after, and generally from one month to three; but sometimes much longer, and that with very various circumstances.

1406. The fits of coughing return at various intervals, rarely observing any exact period. They happen frequently in the course of the day, and more frequently still in the course of th night. The patient has commonly some warning of their coming on; and, to avoid that violent and painful concussion which the coughing gives to the whole body, he clings fast to any thing that is near to him, or demands to be held fast by any person that he can come at.

When the fit is over, the patient sometimes breathes fast, and seems fatigued for a little after: but in many this appears very little; and children are commonly so entirely relieved, that they immediately return to their play, or what else they were occupied in before.

1407. If it happens that the fit of coughing ends in vomiting up the contents of the stomach, the patient is commonly immediately after seized with a strong craving and demand for food, and takes it in very greedily.

1408. At the first coming on of this disease, the expectoration is sometimes none at all, or of a thin mucus only; and while this continues to be the case, the fits of coughing are more violent, and continue longer: but commonly the expectoration soon becomes considerable, and a very thick mucus, often in great quantity, is thrown up; and as this is more readily brought up, the fits of coughing are of shorter duration.

1409. The violent fits of coughing frequently interrupt the ree transmission of the blood through the lungs, and thereby he free return of blood from the vessels of the head. This occasions that turgescence and suffusion of face which commonly attends the fits of coughing, and seems to occasion also hose eruptions of blood from the nose, and even from the eyes nd ears, which sometimes happen in this disease.

1410. This disease often takes place in the manner we have ow described, without any pyrexia attending it; but though ydenham had seldom observed it, we have found the disease ery frequently accompanied with pyrexia, sometimes from the ery beginning, but more frequently only after the disease had ontinued for some time. When it does accompany the disease, we have not found it appearing under any regular intermittent form. It is constantly in some degree present; but with evident exacerbations towards evening, continuing till next morning.

1411. Another symptom very frequently attending the chincough, is a difficulty of breathing; and that not only immediately before and after fits of coughing, but as constantly present, though in different degrees in different persons. I hav hardly ever seen an instance of a fatal chincough, in which considerable degree of pyrexia and dyspnœa had not been fo some time constantly present.

1412. When by the power of the contagion this disease ha once taken place, the fits of coughing are often repeated, without any evident exciting cause: but in many cases, the contagion may be considered as giving a predisposition only; an the frequency of fits depends in some measure upon various exciting causes; such as, violent exercise; a full meal; the having taken in food of difficult solution; irritations of the lung by dust, smoke, or disagreeable odours of a strong kind; an especially any considerable emotion of the mind.

1413. Such are the chief circumstances of this disease, an it is of various event, which, however, may be commonly foreseen by attending to the following considerations:

The younger that children are, they are in the greater danger from this disease; and of those to whom it proves fatal there are many more under two years old than above it.

The older that children are, they are the more secure agains an unhappy event; and this I hold to be a very general rule though I own there are many exceptions to it.

Children born of phthisical and asthmatic parents are in th greatest danger from this disease.

When the disease, beginning in the form of a catarrh, is attended with fever and difficult breathing, and with little expectoration, it often proves fatal, without taking on the form o the hooping-cough; but in most of such cases, the coming o of the convulsive cough and hooping, bringing on at the sam time a more free expectoration, generally removes the danger.

When the disease is fully formed, if the fits are neither frequent nor violent, with moderate expectoration, and the patient, during the intervals of the fits, is easy, keeps his appetite, gets sleep, and is without fever or difficult breathing, the disease is attended with no danger; and these circumstances becoming daily more favourable, the disease very soon spontaneously terminates.

An expectoration, either very scanty or very copious, is attended with danger; especially if the latter circumstance is attended with great difficulty of breathing.

Those cases in which the fits terminate by a vomiting, and are immediately followed by a craving of food, are generally without danger.

A moderate hæmorrhagy from the nose often proves salutary, but very large hæmorrhagies are generally very hurtful.

This disease coming upon persons under a state of much debility, has very generally an unhappy event.

The danger of this disease sometimes arises from the violence of the fits of coughing, occasioning apoplexy, epilepsy, or immediate suffocation; but these accidents are very rare, and the danger of the disease seems generally to be in proportion to the fever and dyspnœa attending it.

1414. The cure of this disease has been always considered as difficult, whether the purpose be to obviate its fatal tendency when it is violent, or merely to shorten the course of it when t is mild. When the contagion is recent, and continues to ct, we neither know how to correct, nor how to expel it; and herefore the disease necessarily continues for some time: but t is probable, that the contagion in this, as in other instances, eases at length to act; and that then the disease continues, as n other convulsive affections, by the power of habit alone.

1415. From this view of the matter I maintain, that the pracice must be different, and adapted to two different indications ccording to the period of the disease. At the beginning of the disease, and for some time after, the remedies to be employed must be such as may obviate the violent effects of the disease, and the fatal tendency of it; but, after the disease has continued for some time, and is without any violent symptoms, the only remedies which can be required are those which may interrupt its course, and put an entire stop to it sooner than it would have spontaneously ceased.

1416. For answering the first indication. In plethoric subjects, or in others, when from the circumstances of the cough and fits it appears that the blood is difficultly transmitted through the lungs, blood-letting is a necessary remedy; and it may be even necessary to repeat it, especially in the beginning of the disease: but, as spasmodic affections do not commonly admit of much bleeding, so it is seldom proper in the chincough to repeat this remedy often.

1417. As costiveness frequently attends this disease, so it is necessary to obviate or remove it by laxatives employed, and keeping an open belly is generally useful: but large evacuations in this way are commonly hurtful.

1418. To obviate or remove the inflammatory determination to the lungs that sometimes occurs in this disease, blistering is often useful, and even repeated blistering has been of service; but issues have not so much effect, and should by no means supersede the repeated blistering that may be indicated. When blisters are proper, they are more effectual when applied to the thorax than when applied to any distant parts.

1419. Of all other remedies, emetics are the most useful in this disease; both in general by interrupting the return of spasmodic affections, and in particular by determining very powerfully to the surface of the body, and thereby taking off determinations to the lungs. For these purposes, I think full vomiting is frequently to be employed; and in the intervals necessary to be left between the times of full vomiting, nauseating doses of the antimonial emetics may be useful. I have never found the *sulphur auratum*, so much praised by Clossius, to be a convement medicine, on account of the uncertainty of its dose; and the tartar emetic, employed in the manner directed by the late Dr Fothergill, has appeared to be more useful.

1420. These are the remedies to be employed in the first stage of the disease, for obviating its fatal tendency, and putting it into a safe train. But in the second stage, when I suppose the contagion has ceased to act, and that the disease continues merely by the power of habit, a different indication arises, and different remedies are to be employed.

1421. This disease, which often continues for a long time, does not, in my opinion, continue during the whole of that time in consequence of the contagion's remaining in the body, and continuing to act in it. That the disease does often continue long after the contagion has ceased to act, and that too by the power of habit alone, appears to me probable from hence, that terror has frequently cured the disease; that any considerable change in the state of the system, such as the coming on of the small-pox, has also cured it; and, lastly, that it has been cured by antispasmodic and tonic medicines; whilst none of all these means of cure can be supposed either to correct or to expel a morbific matter, though they are evidently suited to change the state and habits of the nervous system.

1422. From this view we are directed to the indication that may be formed, and in a great measure to the remedies which may be employed in what we suppose to be the second stage of the disease. It may perhaps be alleged, that this indication of shortening the course of the disease, is not very important or necessary, as it supposes that the violence and danger is over, and, in consequence, that the disease will soon spontaneously cease. The last supposition, however, is not well founded; as the disease, like many other convulsive and spasmodic affections, may continue for a long time by the power of habit alone, and by the repetition of paroxysms, may have hurtful effects, more especially as the violence of paroxysms, and therefore their hurtful effects, may be much aggravated by various external causes that may be accidentally applied. Our indication, therefore, is proper; and we proceed to consider the several remedies which may be employed to answer it.

1423. Terror may possibly be a powerful remedy, but it is difficult to measure the degree of it that shall be produced; and, as a slight degree of it may be ineffectual, and a high degree of it dangerous, I cannot propose to employ it.

1424. The other remedies which we suppose suited to our second indication, and which indeed have been frequently employed in this disease, are antispasmodics or tonics.

Of the antispasmodics, castor has been particularly recommended by Dr Morris; but in many trials we have not found it effectual.

With more probability musk has been employed: but whether it be from our not having it of a genuine kind, or not employing it in sufficiently large doses, I cannot determine; but we have not found it commonly successful. Of antispasmodics, the most certainly powerful is opium: and when there is no considerable fever or difficulty of breathing present, opium has often proved useful in moderating the violence of the chincough; but I have not known it employed so as entirely to cure the disease.

If hemlock has proved a remedy in this disease, as we must believe from Dr Butter's accounts, I agree with that author, that it is to be considered as an antispasmodic. Upon this supposition, it is a probable remedy; and from the accounts of Dr Butter and some others, it seems to have been often useful: but, in our trials, it has often disappointed us, perhaps from the preparation of it not having been always proper.

1425. Of the tonics, I consider the cupmoss, formerly celebrated, as of this kind; as also the bark of the misletoe: but I have had no experience of either, as I have always trusted to the Peruvian bark. I consider the use of this medicine as the most certain means of curing the disease in its second stage; and when there has been little fever present, and a sufficient quantity of the bark has been given, it has seldom failed of soon putting an end to the disease.

1426. When convulsive disorders may be supposed to continue by the force of habit alone, it has been found that a considerable change in the whole of the circumstances and manner of life has proved a cure of such diseases; and analogy has applied this in the case of the chincough so far, that a change of air has been employed, and supposed to be useful. In several instances I have observed it to be so; but I have never found the effects of it durable, or sufficient to put an entire stop to the disease.

SECT. III.—*Of the Spasmodic Affections in the Natural Functions.*

CHAP. VIII.

OF THE PYROSIS, OR WHAT IS NAMED IN SCOTLAND THE WATER-BRASH.

G. LVII. PYROSIS.—*Epigastrii dolor urens, cum copia humoris aquei, plerumque insipidi, aliquando acris eructata.*

1427. THE painful sensations referred to the stomach, and which are probably occasioned by real affections of this organ, are of different kinds. Probably they proceed from affections of different natures, and should therefore be distinguished by different appellations; but I must own that the utmost precision in this matter will be difficult. In my essay towards a methodical Nosology, I have, however, attempted it. For those pains that are either acute and pungent, or accompanied with a sense of distention, or with a sense of constriction, if they are at the same time not attended with any sense of acrimony or heat, I employ the appellation of Gastrodynia. To express those painful or uneasy sensations which seem to arise from a sense of acrimony irritating the part, or from such a sense of heat as the application of acrids, whether externally or internally applied, often gives, I employ the term of Cardialgia; and by this I particularly mean to denote those feelings which are expressed by the term Heartburn in the English language. I think the term Soda has been commonly employed by practical writers to express an affection attended with feelings of the latter kind.

1428. Beside the pains denoted by the terms Gastrodynia, Periadynia, Cardialgia, and Soda, there is, I think, another painful sensation different from all of these, which is named by Mr Sauvages Pyrosis Suecica; and his account of it is taken from Linnæus, who names it Cardialgia Sputatoria. Under the title of Pyrosis Mr Sauvages has formed a genus, of which the whole of the species, except the eighth, which he gives under the title of Pyrosis Suecica, are all of them species of the Gastrodynia or of the Cardialgia; and if there is a genus to be formed under the title of Pyrosis, it can in my opinion comprehend only the species I have mentioned. In this case, indeed, I own that the term is not very proper; but my aversion to introduce new names has made me continue to employ the term of Mr Sauvages.

1429. The Gastrodynia and Cardialgia I judge to be for the most part symptomatic affections; and therefore have given them no place in this work: but the Pyrosis, as an idiopathic disease, and never before treated of in any system, I propose to treat of here.

1430. It is a disease frequent among people in lower life; ut occurs also, though more rarely, in people of better condiion. Though frequent in Scotland, it is by no means so freuent as Linnæus reports it to be in Lapland. It appears most ommonly in persons under middle age, but seldom in any perons before the age of puberty. When it has once taken place t is ready to recur occasionally for a long time after; but it eldom appears in persons considerably advanced in life. It afects both sexes, but more frequently the female. It sometimes ttacks pregnant women, and some women only when they are n that condition. Of other women, it more frequently affects he unmarried; and of the married, most frequently the barren. have had many instances of its occurring in women labouring nder a fluor albus.

1431. The fits of this disease usually come on in the morning nd forenoon, when the stomach is empty. The first symptom f it is a pain at the pit of the stomach, with a sense of constricon, as if the stomach was drawn towards the back; the pain increased by raising the body into an erect posture, and therere the body is bended forward. This pain is often very seere; and, after continuing for some time, it brings on an euctation of a thin watery fluid in considerable quantity. This uid has sometimes an acid taste, but is very often absolutely isipid. The eructation is for some time frequently repeated; nd does not immediately give relief to the pain which precedd it, but does so at length, and puts an end to the fit.

1432. The fits of this disease commonly come on without y evident exciting cause; and I have not found it steadily nnected with any particular diet. It attacks persons using imal food, but I think more frequently those living on milk d farinacea. It seems often to be excited by cold applied to e lower extremities; and is readily excited by any considerae emotion of mind. It is often without any symptoms of dyspsia.

1433. The nature of this affection is not very obvious ; b
I think it may be explained in this manner : It seems to begi
by a spasm of the muscular fibres of the stomach ; which
afterwards, in a certain manner, communicated to the bloo
vessels and exhalants, so as to increase the impetus of t
fluids in these vessels, while a constriction takes place on the
extremities. While therefore the increased impetus determin
a greater quantity than usual of fluids into these vessels, th
constriction upon their extremities allows only the pure water
parts to be poured out, analogous, as I judge, in every respect
to what happens in the diabetes hystericus.

1434. The practice in this disease is as difficult as the theory
The paroxysm is only to be certainly relieved by opium. Othe
antispasmodics, as vitriolic ether and volatile alkali, are some
times of service, but not constantly so. Although opium an
other antispasmodics relieve the fits, they have no effect in pre
venting their recurrence. For this purpose, the whole of th
remedies of dyspepsia have been employed without success
Of the use of the nux vomica, mentioned as a remedy by Lin
næus, I have had no experience.

CHAP. IX.

OF THE COLIC.

G. LVIII. Colica.—*Dolor abdominis, præcipue circa umbilicum orquens; vomitus; alvus adstricta.*

Sp. 1. *Colica (spasmodica) cum retractione umbilici et spasmis nusculorum abdominalium.*

Sp. 2. *Colica (pictonum) præeunte ponderis vel molestiæ in abdomine, ræcipue circa umbilicum, sensu; accedente dolore colico, primum levi, on continuo, et præcipue post pastum aucto; tandem graviore et fere erpetuo; cum dolore brachiorum, et dorsi, in paralysin demum abente.*

Sp. 3. *Colica (stercorea) in hominibus alvi tardæ, post diuturnam lvi obstipationem.*

Sp. 4. *Colica (accidentalis) a materie acri ingesta.*

Sp. 5. *Colica (meconialis) neophytorum a meconio retento.*

Sp. 6. *Colica (callosa) cum sensu in quadam intestinorum parte tricturæ, et sæpe ante eam collecti flatus cum aliquo dolore, qui flatus tiam per eandem paulatim transiens evanescit; alvo tarda, et tandem on nisi fæces paucas liquidas egerente.*

Sp. 7. *Colica (calculosa) cum duritie in quadam parte abdominis ixa; calculis quondam per anum dejectis.*

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435. The principal symptom of this disease, is a pain felt n the lower belly. It is seldom fixed and pungent in one part, ut is a painful distention in some measure spreading over the hole of the belly; and particularly with a sense of twisting r wringing round the navel. At the same time, with this ain, the navel and teguments of the belly are frequently drawn nwards, and often the muscles of the belly are spasmodically

contracted, and this in separate portions, giving the appearanc of a bag full of round balls.

1436. Such pains, in a certain degree, sometimes occur i cases of diarrhœa and cholera; but these are less violent an more transitory, and are named Gripings. It is only whe more violent and permanent, and attended with costivenes that they constitute colic. This is also commonly attende with vomiting, which in many cases is frequently repeated especially when any thing is taken down into the stomach and in such vomitings, not only the contents of the stomach ar thrown up, but also the contents of the duodenum, and therefore frequently a quantity of bile.

1437. In some cases of colic, the peristaltic motion is inverted through the whole length of the alimentary canal, i such a manner that the contents of the great guts, and therefore stercoraceous matter, is thrown up by vomiting; and the same inversion appears still more clearly from this, that what is thrown into the rectum by glyster is again thrown out by the mouth. In these circumstances of inversion the disease has been named Ileus, or the Iliac Passion; and this has been supposed to be a peculiar disease distinct from colic; but to me it appears that the two diseases are owing to the same proximate cause, and have the same symptoms, only in different degree.

1438. The colic is often without any pyrexia attending it. Sometimes, however, an inflammation comes upon the part of the intestine especially affected; and this inflammation aggravates all the symptoms of the disease, being probably what brings on the most considerable inversion of the peristaltic motion; and, as the stercoraceous vomiting is what especially distinguishes the ileus, this has been considered as always depending on an inflammation of the intestines. However, I can affirm, that as there are inflammations of the intestines without stercoraceous vomiting, so I have seen instances of stercoraceous vomiting without inflammation; and there is therefore no ground for distinguishing ileus from colic, but as a higher degree of the same affection.

1439. The symptoms of the colic, and the dissections of bodies dead of this disease, show very clearly, that it depends upon a spasmodic constriction of a part of the intestines; and that this therefore is to be considered as the proximate cause of the disease. In some of the dissections of persons dead of this disease, an intus-susception has been remarked to have happened; but whether this be constantly the case in all the appearances of ileus, is not certainly determined.

1440. The colic has commonly been considered as being of different species, but I cannot follow the writers on this subject in the distinctions they have established. So far, however, as a difference of the remote cause constitutes a difference of species, a distinction may perhaps be admitted; and accordingly in my Nosology I have marked seven different species: but I am well persuaded, that in all these different species the proximate cause is the same, that is, a spasmodic constriction of a part of the intestines; and consequently, that in all these cases the indication of cure is the same, that is, to remove the constriction mentioned. Even in the several species named *Stercorea*, *Callosa*, and *Calculosa*, in which the disease depends upon an obstruction of the intestine, I am persuaded that these obstructions do not produce the symptoms of colic, excepting in so far as they produce spasmodic constrictions of the intestines; and therefore, that the means of cure in these cases, so far as they admit of cure, must be obtained by the same means which the general indication above mentioned suggests.

1441. The cure, then, of the colic universally, is to be obtained by removing the spasmodic constrictions of the intestines; and the remedies suited to this purpose may be referred to three general heads:

1. The taking off the spasm by various antispasmodic powers.
2. The exciting the action of the intestines by purgatives.
3. The employing mechanical dilatation.

1442. Before entering upon a more particular account of these remedies, it will be proper to observe, that in all cases of violent colic, it is advisable to practise blood-letting; both as it may be useful in obviating the inflammation which is commonly to be apprehended, and even as it may be a means of relaxing the spasm of the intestine. This remedy may perhaps be improper in persons of a weak and lax habit, but in all persons of tolerable vigour it will be a safe remedy; and in all cases where there is the least suspicion of an inflammation actually coming on, it will be absolutely necessary. Nay, it will even be proper to repeat it perhaps several times, if, with a full and hard pulse, the appearance of the blood drawn, and the relief obtained by the first bleeding, shall authorise such repetition.

1443. The antispasmodic powers that may be employed, are the application of heat in a dry or humid form, the application of blisters, the use of opium, and the use of mild oils.

The application of heat, in a dry form, has been employed by applying to the belly of the patient a living animal, or bladders filled with warm water, or bags of substances which long retain their heat; and all these have sometimes been applied with success; but none of them seem to me so powerful as the application of heat in a humid form.

This may be employed either by the immersion of a great part of the body in warm water, or by fomenting the belly with cloths wrung out of hot water. The immersion has advantages from the application of it to a greater part of the body, and particularly to the lower extremities: but immersion cannot always be conveniently practised, and fomentation may have the advantage of being longer continued; and it may have nearly all the benefit of immersion, if it be at the same time applied both to the belly and to the lower extremities.

1444. From considering that the teguments of the lower belly have such a connection with the intestines, as at the same time to be affected with spasmodic contractions, we perceive that blisters applied to the belly may have the effect of taking off the spasms both from the muscles of the belly and from the ntestines; and accordingly, blistering has often been employed n the colic with advantage. Analogous to this, rubefacients applied to the belly have been frequently found useful.

1445. The use of opium in colic may seem to be an ambiguous remedy. Very certainly it may for some time relieve the pain, which is often so violent and urgent, that it is difficult to abstain from the use of such a remedy. At the same time, the use of opium retards or suspends the peristaltic motion so much, as to allow the intestines to fall into constrictions; and may therefore, while it relieves the pain, render the cause of the disease more obstinate. On this account, and further as opium prevents the operation of purgatives so often necessary in this disease, many practitioners are averse to the use of it, and some entirely reject the use of it as hurtful. There are, however, others who think they can employ opium in this disease with much advantage.

In all cases where the colic comes on without any previous costiveness, and arises from cold, from passions of the mind, or other causes which operate especially on the nervous system, opium proves a safe and certain remedy; but in cases which have been preceded by long costiveness, or where the colic, though not preceded by costiveness, has however continued for some days without a stool, so that a stagnation of fæces in the colon is to be suspected, the use of opium is of doubtful effect. In such cases, unless a stool has been first procured by medicine, opium cannot be employed but with some hazard of aggravating the disease. However, even in those circumstances of costiveness, when, without inflammation, the violence of the spasm is to be suspected, when vomiting prevents the exhibition of purgatives, and when with all this the pain is extremely urgent, opium is to be employed, not only as an anodyne, but also as an antispasmodic, necessary to favour the operation of purgatives; and may be so employed, when, either at the same time with the opiate, or not long after it, a purgative can b exhibited.

Is the hyoscyamus, as often showing, along with its narcotic, a purgative quality, better suited to this disease than opium ?

1446. It is seemingly on good grounds that several practitioners have recommended the large use of mild oils in this disease, both as antispasmodics and as laxatives; and, where the palate and stomach could admit them, I have found them very useful. But, as there are few Scottish stomachs that can admit a large use of oils, I have had few opportunities of employing them.

1447. The second set of remedies adapted to the cure of colic, are purgatives; which, by exciting the action of the intestines, either above or below the obstructed place, may remove the constriction; and therefore these purgatives may be given either by the mouth, or thrown by glyster into the anus. As the disease is often seated in the great guts; as glysters, by having a more sudden operation, may give more immediate relief; and as purgatives given by the mouth are ready to be rejected by vomiting; so it is common, and indeed proper, to attempt curing the colic in the first place by glysters. These may at first be of the mildest kind, consisting of a large bulk of water, with some quantity of a mild oil; and such are sometimes sufficiently efficacious: however, they are not always so; and it is commonly necessary to render them more powerfully stimulant by the addition of neutral salts, of which the most powerful is the common or marine salt. If these saline glysters, as sometimes happens, are rendered again too quickly, and on this account or otherwise are found ineffectual, it may be proper, instead of these salts, to add to the glysters an infusion of senna, or of some other purgative that can be extracted by water. The antimonial wine may be sometimes employed in glysters with advantage. Hardly any glysters are more effectual than those made of turpentine properly prepared. When all other injections are found ineffectual, recourse is to be had to the injection of tobacco-smoke; and, when even this fails; recourse is to be had to the mechanical dilatation to be mentioned hereafter.

1448. As glysters often fail altogether in relieving this disease, and as even when they give some relief they are often imperfect in producing a complete cure; so it is generally proper, and often necessary, to attempt a more entire and certain cure by purgatives given by the mouth. The more powerful of these, or, as they are called, the Drastic Purgatives, may be sometimes necessary; but their use is to be avoided, both because they are apt to be rejected by vomiting, and because when they do not succeed in removing the obstruction, they are ready to induce an inflammation. Upon this account it is usual, and indeed proper, at least in the first place, to employ the milder and less inflammatory purgatives. None have succeeded with me beter than the crystals of tartar, because this medicine may be coneniently given in small but repeated doses, to a considerable uantity; and, under this management, it is the purgative least eady to be rejected by vomiting, and much less so than the oher neutral salts. If a stronger purgative be required, jalap, roperly prepared, is less offensive to the palate, and sits better pon the stomach, than most other powerful purgatives. On nany occasions of colic, nothing is more effectually purgative han a large dose of calomel. Some practitioners have attemptd to remove the obstruction of the intestines by antimonial metics, exhibited in small doses, repeated at proper intervals; nd when these doses are not entirely rejected by vomiting, they ften prove effectual purgatives.

When every purgative has failed, the action of the intestines s been effectually excited by throwing cold water on the low- extremities.

1449. The third means of overcoming the spasm of the instines in this disease, is by employing a mechanical dilatation; d it has been frequently supposed, that quicksilver given in rge quantity might operate in this manner. I have not, however, found it successful; and the theory of it is with me very doubtful. Some authors have mentioned the use of gold and silver pills, or balls swallowed down; but I have no experience of such practices, and I cannot suppose them a probable means of relief.

1450. Another means of mechanical dilatation, and a more probable measure, is by injecting a large quantity of warm water by a proper syringe, which may throw it with some force, and in a continued stream, into the rectum. Both from the experiments reported by the late Mr De Haen, and from those I myself have had occasion to make, I judge this remedy to be one of the most powerful and effectual.

1451. I have now mentioned all the several means that may be employed for the cure of the colic, considered as a genus; but before I quit this subject, it may be expected that I should take notice of some of the species which may seem to require a particular consideration. In this view, it may be expected that I should especially take notice of that species named the Colic of Poitou, and particularly known in England by the name of the Devonshire Colic.

1452. This species of the disease is certainly a peculiar one both in respect of its cause and its effects; but, as to the first, it has been lately so much the subject of investigation, and is so well ascertained by the learned physicians Sir George Baker and Dr Hardy, that it is unnecessary for me to say any thing of it here.

With respect to the cure of it, so far as it appears in the form of a colic, my want of experience concerning it does not allow me to speak with any confidence on the subject; but, so far as I can learn from others, it appears to me, that it is to be treated by all the several means that I have proposed above for the cure of colic in general.

How far the peculiar effects of this disease are to be certainly foreseen and obviated, I have not properly learned; and I must leave the matter to be determined by those who have had sufficient experience in it.

CHAP. X.

OF THE CHOLERA.

G. LIX. Cholera.—*Humoris biliosi vomitus, ejusdem simul dejectio frequens ; anxietas ; tormina ; surarum spasmata.*

Sp. 1. *Cholera (spontanea) tempestate calida, sine causa manifesta boriens.*

Sp. 2. *Cholera (accidentalis) a rebus acribus ingestis.*

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453. In this disease, a vomiting and purging concurring to-ether, or frequently alternating with one another, are the chief ymptoms. The matter rejected both upwards and downwards ppears manifestly to consist chiefly of bile.

1454. From this last circumstance I conclude, that the dis-ase depends upon an increased secretion of bile, and its copious ffusion into the alimentary canal; and, as in this it irritates and xcites the motions above mentioned, I infer, that the bile thus ffused in larger quantity is, at the same time, also of a more rid quality. This appears likewise from the violent and very inful gripings that attend the disease, and which we can im-ite only to the violent spasmodic contractions of the intestines at take place here. These spasms are commonly communi-ted to the abdominal muscles, and very frequently to those of extremities.

1455. In the manner now described, the disease frequently oceeds with great violence, till the strength of the patient is atly, and often suddenly, weakened; while a coldness of the remities, cold sweats, and faintings coming on, an end is put to the patient's life, sometimes in the course of one day. In other cases the disease is less violent, continues for a day or two, and then ceases by degrees, though such recoveries seldom happen without the assistance of remedies.

1456. The attacks of this disease are seldom accompanied with any symptoms of pyrexia; and though, during the course of it, both the pulse and respiration are hurried and irregular, yet these symptoms are generally so entirely removed by the remedies that quiet the spasmodic affections peculiar to the disease, as to leave no ground for supposing that it had been accompanied by any proper pyrexia.

1457. This is a disease attending a very warm state of the air; and in very warm climates, it may perhaps appear at any time of the year; but even in such climates it is most frequent during their warmest seasons; and in temperate climates, it appears only in the warm seasons. Dr Sydenham considered the appearances of this disease in England to be confined to the month of August; but he himself observed it to appear sometimes towards the end of summer, when the season was unusually warm; and that in proportion to the heat, the violence of the disease was greater. Others have observed that it appeared more early in summer, and always sooner or later, according as the great heats sooner or later set in.

1458. From all these circumstances, it is, I think, very evident, that this disease is the effect of a warm atmosphere, producing some change in the state of the bile in the human body and the change may consist either in the matter of the bile being rendered more acrid, and thereby fitted to excite a more copious secretion; or in the same matter its being prepared t pass off in larger quantity than usual.

1459. It has been remarked, that in warm climates and seasons, after extremely hot and dry weather, a fall of rain coolin the atmosphere seems especially to bring on this disease; an it is very probable that an obstructed perspiration may have also a share in this, though it is also certain that the disease doe appear when no change in the temperature of the air, nor any application of cold, have been observed.

1460. It is possible that, in some cases, the heat of the season may give only a predisposition, and that the disease may be excited by certain ingesta or other causes; but it is equally certain that the disease has occurred without any previous change or error, either in diet, or in the manner of life, that could be observed.

1461. The Nosologists have constituted a Genus under the title of Cholera, and under this have arranged as species every affection in which a vomiting and purging of any kind happened to concur. In many of these species, however, the matter evacuated is not bilious; nor does the evacuation proceed from any cause in the state of the atmosphere. Further, in many of these species also, the vomiting which occurs is not an essential, but merely an accidental symptom from the particular violence of the disease. The appellation of Cholera therefore should, in my opinion, be confined to the disease I have described above; which, by its peculiar cause, and perhaps also by its symptoms, is very different from all the other species that have been associated with it. I believe that all the other species arranged under the title of Cholera by Sauvages or Sagar, may be properly enough referred to the genus of Diarrhœa; which we are to treat of in the next chapter.

The distinction I have endeavoured to establish between the proper Cholera, and the other diseases that have sometimes got the same appellation, will, as I judge, supersede the question, Whether the Cholera, in temperate climates, happens at any other season than that above assigned?

1462. In the case of a genuine cholera, the cure of it has been long established by experience.

In the beginning of the disease, the evacuation of the redundant bile is to be favoured by the plentiful exhibition of mild diluents, both given by the mouth and injected by the anus; and all evacuant medicines, employed in either way, are not only superfluous, but commonly hurtful.

1463. When the redundant bile appears to be sufficiently washed out, and even before that, if the spasmodic affections of the alimentary canal become very violent, and are communicated in a considerable degree to other parts of the body, or when a dangerous debility seems to be induced, the irritation is to be immediately obviated by opiates, in sufficiently large doses, but in small bulk, and given either by the mouth or by glyster.

1464. Though the patient be in this manner relieved, it frequently happens, that when the operation of the opium is over, the disease shows a tendency to return; and, for at least some days after the first attack, the irritability of the intestines, and their disposition to fall into painful spasmodic contractions, seem to continue. In this situation, the repetition of the opiates, for perhaps several days, may come to be necessary; and as the debility commonly induced by the disease favours the disposition to spasmodic affections, it is often useful and necessary, together with the opiates, to employ the tonic powers of the Peruvian bark.

CHAP. XI.

OF DIARRHŒA, OR LOOSENESS.

G. LX. Diarrhœa.—*Dejectio frequens; morbus non contagiosus; pyrexia nulla primaria.*

Sp. 1. *Diarrhœa (crapulosa) qua stercora naturalibus liquidiora et majori copia dejiciuntur.*

Sp. 2. *Diarrhœa (biliosa) qua fæces flavæ magna copia dejiciuntur.*

Sp. 3. *Diarrhœa (mucosa) qua vel ab acribus ingestis, vel a frigore, præcipue pedibus applicato, mucus copiosus dejicitur.*

Sp. 4. *Diarrhœa (cœliaca) qua humor lacteus specie chyli dejicitur.*

Sp. 5. *Diarrhœa (lienteria) qua ingesta parum mutata celeriter dejiciuntur.*

Sp. 6. *Diarrhœa (hepatirrhœa) qua materies seroso-cruenta, sine dolore dejicitur.*

1465. This disease consists in evacuations by stool, more frequent and of more liquid matter than usual. This leading and characteristic symptom is so diversified in its degree, in its causes, and in the variety of matter evacuated, that it is almost impossible to give any general history of the disease.

1466. It is to be distinguished from dysentery, by not being contagious; by being generally without fever, and by being with the evacuation of the natural excrements, which are, at least for some time, retained in dysentery. The two diseases have been commonly distinguished by the gripings being more violent in the dysentery; and they are commonly less violent and less frequent in diarrhœa: but as they frequently do occur in this also, and sometimes to a considerable degree, so they do not afford any proper distinction.

1467. A diarrhœa is to be distinguished from cholera chiefly by the difference of their causes; which, in cholera, is of one peculiar kind; but in diarrhœa is prodigiously diversified, as we shall see presently. It has been common to distinguish cholera, by the evacuation downwards being of bilious matter, and by this being always accompanied with a vomiting of the same kind; but it does not universally apply, as a diarrhœa is sometimes attended with vomiting, and even of bilious matter.

1468. The disease of diarrhœa, thus distinguished, is very greatly diversified; but in all cases, the frequency of stools is to be imputed to a preternatural increase of the peristaltic motion in the whole, or at least a considerable portion, of the intestinal canal. This increased action is in different degrees, is often convulsive and spasmodic, and at any rate is a *motus abnormis*: for which reason, in the Methodical Nosology, I have referred it to the order of Spasmi, and accordingly treat of it in this place.

1469. Upon the same ground, as I consider the disease named Lientery to be an increased peristaltic motion over the whole of the intestinal canal, arising from a peculiar irritability, I have considered it as merely a species of diarrhœa. The idea of a laxity of the intestinal canal being the cause either of lientery, or other species of diarrhœa, appears to me to be without foundation, except in the single case of frequent liquid stools from a palsy of the *sphincter ani.*

1470. The increased action of the peristaltic motion, I consider as always the chief part of the proximate cause of diarrhœa; but the disease is further, and indeed chiefly, diversified by the different causes of this increased action; which we are now to inquire into.

1471. The several causes of the increased action of the intestines may be referred, I think in the first place, to two general heads.

The *first* is, of the diseases of certain parts of the body, which, either from a consent of the intestines with these parts, or from the relation which the intestines have to the whole system, occasion an increased action in the intestines, without the transference of any stimulant matter from the primary diseased part to them.

The *second* head of the causes of the increased action of the intestines, is of the stimuli of various kinds, which are applied directly to the intestines themselves.

1472. That affections of other parts of the system may affect the intestines without the transference or application of any stimulant matter, we learn from hence, that the passions of the mind do in some persons excite diarrhœa.

1473. That diseases in other parts may in like manner affect the intestines, appears from the dentition of infants frequently exciting diarrhœa. I believe that the gout often affords another instance of the same kind; and probably there are others also, though not well ascertained.

1474. The stimuli (1471.) which may be applied to the intestines, are of very various kinds; and are either,

1. Matters introduced by the mouth.

2. Matters poured into the intestines by the several excretories opening into them.

3. Matters poured from certain preternatural openings made into them in certain diseases.

1475. Of those (1471. 1.) introduced by the mouth, the first to be mentioned are the aliments commonly taken in. Too great a quantity of these taken in often prevents their due digestion in the stomach; and by being thus sent in their crude, and probably acrid state, to the intestines, they frequently excite diarrhœa.

The same aliments, though in proper quantity, yet having too great a proportion, as frequently happens, of saline or saccharine matter along with them, prove stimulant to the intestines, and excite diarrhœa.

But our aliments prove especially the causes of diarrhœa, according as they, from their own nature, or from the weakness of the stomach, are disposed to undergo an undue degree of fermentation there, and thereby become stimulant to the intestines. Thus acescent aliments are ready to produce diarrhœa; but whether from their having any directly purgative quality, or only as mixed in an over-proportion with the bile, is not well determined.

1476. Not only the acescent, but also the putrescent disposition of the aliments, seems to occasion a diarrhœa; and it appears that even the effluvia of putrid bodies, taken in any way in large quantity, have the same effect.

Are oils or fats, taken in as a part of our aliments, ever the cause of diarrhœa? and if so, in what manner do they operate?

1477. The other matters introduced by the mouth, which may be causes of diarrhœa, are those thrown in either as medicines, or poisons that have the faculty of stimulating the alimentary canal. Thus, in the list of the Materia Medica, we have a long catalogue of those named purgatives; and in the list of poisons, we have many possessed of the same quality. The former, given in a certain quantity, occasion a temporary diarrhœa; and given in very large doses, may occasion it in excess, and continue it longer than usual, producing that species of diarrhœa named a Hypercatharsis.

1478. The matters (1474. 2.) poured into the cavity of the intestines from the excretories opening into them, and which may occasion diarrhœa, are either those from the pancreatic or biliary duct, or those from the excretories in the coats of the intestines themselves.

1479. What changes may happen in the pancreatic juice, I do not exactly know; but I suppose that an acrid fluid may issue from the pancreas, even while still entire in its structure; but more especially, when it is in a suppurated, scirrhous, or cancerous state, that a very acrid matter may be poured out by the pancreatic duct, and occasion diarrhœa.

1480. We know well, that from the biliary duct the bile may be poured out in greater quantity than usual; and there is little doubt of its being also sometimes poured out of a more than ordinary acrid quality. It is very probable, that in both ways the bile is frequently a cause of diarrhœa.

Though I have said above that diarrhœa may be commonly distinguished from cholera, I must admit here, that as the causes producing that state of the bile which occasions cholera, may occur in all the different possible degrees of force, so as, on one occasion, to produce the most violent and distinctly marked cholera; but, upon another, to produce only the gentlest diarrhœa; which, however, will be the same disease, only varying in degree; so I think it probable, that in warm climates, and in warm seasons, a *diarrhœa biliosa* of this kind may frequently occur, not to be always certainly distinguished from cholera.

However this may be, it is sufficiently probable, that, in some cases, the bile, without having been acted upon by the heat of the climate or season, may be redundant and acrid, and prove therefore a particular cause of diarrhœa.

1481. Beside bile from the several causes and in the conditions mentioned, the biliary duct may pour out pus, or other matter, from abscesses in the liver, which may be the cause of diarrhœa.

Practical writers take notice of a diarrhœa wherein a thin and bloody liquid is discharged; which they suppose to have proceeded from the liver, and have therefore given the disease the name of Hepatirrhœa: but we have not met with any instance of this kind; and therefore cannot properly say any thing concerning it.

1482. A second set of excretories, from which matter is poured into the cavity of the intestines, are those from the coats of the intestines themselves; and are either the exhalants proceeding directly from the extremities of arteries, or the excretories from the mucous follicles: and both these sources occur in prodigious number over the internal surface of the whole intestinal canal. It is probable that it is chiefly the effusion from these sources which, in most instances, gives the matter of the liquid stools occurring in diarrhœa.

1483. The matter from both sources may be poured out in larger quantity than usual, merely by the increased action of the intestines, whether that be excited by the passions of the mind (1422.), by diseases in other parts of the system (1471. 1.), or by the various stimulants mentioned 1475. and following; or the quantity of matter poured out may be increased, not so much by the increased action of the intestines, as by an increased afflux of fluids from other parts of the system.

Thus, cold applied to the surface of the body, and suppressing perspiration, may determine a greater quantity of fluids to the intestines.

Thus, in the *ischuria renalis*, the urine taken into the bloodvessels is sometimes determined to pass off again by the intestines.

In like manner, pus or serum may be absorbed from the cavities in which they have been stagnant, and be again poured out into the intestines, as frequently happens, in particular with respect to the water of dropsies.

1484. It is to be observed here, that a diarrhœa may be excited not only by a copious afflux of fluids from other parts of the system, but likewise by the mere determination of various acrid matters from the mass of blood into the cavity of the intestines. Thus it is supposed that the morbific matter of fevers is sometimes thrown out into the cavity of the intestines, and gives a critical diarrhœa: and whether I do, or do not admit the doctrine of critical evacuations, I think it is probable that the morbific matter of the exanthemata is frequently thrown upon the intestines and occasions diarrhœa.

1485. It is to me further probable, that the putrescent matter diffused over the mass of blood in putrid diseases, is frequently poured out by the exhalants into the intestines, and proves there the cause, at least in part, of the diarrhœa so commonly attending these diseases.

1486. Upon this subject of the matters poured into the cavity of the intestines, I have chiefly considered them as poured out in unusual quantity: but it is probable, that for the most part they are also changed in their quality, and become of a more acrid and stimulant nature; upon which account especially it is that they excite, or at least increase a diarrhœa.

1487. How far, and in what manner the exhalant fluid may be changed in its nature and quality, we do not certainly know: but with respect to the fluid from the mucous excretories, we know, that when poured out in unusual quantity, it is commonly, at the same time, in a more liquid and acrid form; and may prove therefore considerably irritating.

1488. Though the copious effusion of a more liquid and acrid matter from the mucous excretories be probably owing to the matter being poured out immediately, as it is secreted from the blood into the mucous follicles, without being allowed to stagnate in the latter, so as to acquire that milder quality and thicker consistence we commonly find in the mucus in its natural state; and although we might suppose that the excretions of a thin and acrid fluid should always be the effect of every determination to the mucous follicles, and of every stimulant applied to them; yet it is certain that the reverse is sometimes the case; and that, from the mucous follicles, there is frequently an increased excretion of a mucus, which appears in its proper form, of a mild, viscid, and thickish matter. This commonly occurs in the case of dysentery; and it has been observed to give a species of diarrhœa, which has been properly named the *Diarrhœa Mucosa*.

1489. A third source of matter poured into the cavity of the intestines, and occasioning diarrhœa (1474. 3.), is from those preternatural openings produced by diseases in the intestines or neighbouring parts. Thus the blood-vessels on the internal surface of the intestines may be opened by erosion, rupture, or anastomosis, and pour into the cavity their blood, which, either by its quantity or by its acrimony, whether inherent, or acquired by stagnation, may sometimes give a diarrhœa evacuating bloody matter. This is what I think happens in that disease which has been called the *Melæna* or *Morbus Niger*.

1490. Another preternatural source of matter poured into the cavity of the intestines, is the rupture of abscesses seated either in the coats of the intestines themselves, or in any of the contiguous viscera, which, during an inflamed state, had formed an adhesion with some part of the intestines. The matter thus poured into their cavity may be various; purulent, or sanious, or both together, mixed at the same time with more or less of blood; and in each of these states may be a cause of diarrhœa.

1491. Amongst the stimuli that may be directly applied to the intestines, and which, by increasing their peristaltic motion, may occasion diarrhœa, I must not omit to mention worms, as having frequently that effect.

1492. I must also mention here a state of the intestines, wherein their peristaltic motion is preternaturally increased, and a diarrhœa produced; and that is, when they are affected with an erythematic inflammation. With respect to the existence of such a state, and its occasioning diarrhœa, see what is said above in 398. and following. Whether it is to be considered as a particular and distinct case of diarrhœa, or is always the same with some of those produced by one or other of the causes above mentioned, I have not been able to determine.

1493. Lastly, by an accumulation of alimentary or of other matter poured into the cavity of the intestines from several of the sources above mentioned, a diarrhœa may be especially occasioned when the absorption of the lacteals, or of other absorbents, is prevented, either by an obstruction of their orifices, or by an obstruction of the mesenteric glands, through which alone the absorbed fluids can be transmitted.

In one instance of this kind, when the chyle prepared in the stomach and duodenum is not absorbed in the course of the intestines, but passes off in considerable quantity by the anus, the disease has been named the *Morbus Cœliacus*, or simply and more properly *Cœliaca;* which accordingly I have considered as a species of diarrhœa.

1494. I have thus endeavoured to point out the various species of disease that may come under the general appellation of Diarrhœa; and from that enumeration it will appear, that many, and indeed the greater part of the cases of diarrhœa, are to be considered as sympathic affections, and to be cured only by curing the primary disease upon which they depend; of which however I cannot properly treat here. From our enumeration it will also appear, that many of the cases of diarrhœa which may be considered as idiopathic, will not require my saying much of them here. In many instances the disease is ascertained, and also the cause assigned, by the condition of the matter evacuated; so that what is necessary to correct or remove it, will be sufficiently obvious to practitioners of any knowledge. In short, I do not find that I can offer any general plan for the cure of diarrhœa: and all that I can propose to do on this subject, is to give some general remarks on the practice that has been commonly followed in the cure of this disease.

1495. The practice in this disease has chiefly proceeded upon the supposition of an acrimony in the fluids, or of a laxity in the simple and moving fibres of the intestines; and the remedies employed have accordingly been, correctors of particular acrimony, general demulcents, evacuants by vomiting or purging, astringents, or opiates. Upon each of these kinds of remedy I shall now offer some remarks.

1496. An acid acrimony is, upon several occasions, the cause of diarrhœa, particularly in children; and in such cases the absorbent earths have been very properly employed. The common, however, and promiscuous use of these has been very injudicious; and where there is any putrescency, they must b hurtful.

1497. The cases in which there is a putrid or putrescent acrimony prevailing, have been, I think, too seldom taken notice of; and therefore the use of acids too seldom admitted. The acrimony to be suspected in bilious cases, is probably of the putrescent kind.

1498. The general correctors of acrimony are the mild diluents and demulcents. The former have not been so much employed in diarrhœa as they ought; for, joined with demulcents, they very much increase the effects of the latter: and although the demulcents, both mucilaginous and oily, may by themselves be useful, yet without the assistance of diluents, they can hardly be introduced in such quantity as to answer the purpose.

1499. As indigestion and crudities present in the stomach are so often the cause of diarrhœa, vomiting must therefore be frequently very useful in this disease.

In like manner, when the disease proceeds, as it often does, from obstructed perspiration, and increased afflux of fluids to the intestines, vomiting is perhaps the most effectual means of restoring the determination of the fluids to the surface of the body.

It is possible also, that vomiting may give some inversion of the peristaltic motion, which is determined too much downwards in diarrhœa; so that upon the whole it is a remedy which may be very generally useful in this disease.

1500. Purging has been supposed to be more universally necessary, and has been more generally practised. This, however, in my opinion, proceeds upon very mistaken notions with respect to the disease; and such a practice seems to me for the most part superfluous, and in many cases very hurtful. It goes upon the supposition of an acrimony present in the intestines that ought to be carried out by purging: but, if that acrimony has either been introduced by the mouth, or brought into the intestines from other parts of the body, purging can neither be a means of correcting nor of exhausting it; and must rather have the effect of increasing its afflux, and of aggravating its effects. From whatever source the acrimony which can excite a diarrhœa proceeds, it may be supposed sufficient to evacuate itself, so far as that can be done by purging; and as in cholera, so in the same kind of diarrhœa, it will be more proper to assist the evacuation by diluents and demulcents, than to increase the irritation by purgatives.

1501. If, then, the use of purgatives in diarrhœa may be considered, even when an acrimony is present, as superfluous, there are many other cases in which it may be extremely hurtful. If the irritability of the intestines shall, from affections in other parts of the system, or other causes, have been already very much increased, purgatives must necessarily aggravate the disease. In the case of lientery, nobody thinks of giving a purgative; and in many cases of diarrhœa approaching to that, they must be equally improper. I have already observed, that when diarrhœa proceeds from an afflux of fluids to the intestines, whether in too great quantity, or of an acrid quality, purgatives may be hurtful; and whoever, therefore, considers the numerous and various sources from which acrid matter may be poured into the cavity of the intestines, will readily perceive, that, in many cases of diarrhœa, purgatives may be extremely pernicious.

There is one case in particular to be taken notice of. When, from a general and acrid dissolution of the blood, the serous fluids run off too copiously into the cavity of the intestines, and excite that diarrhœa which attends the advanced state of hectic fever, and is properly called a Colliquative Diarrhœa; I have, in such cases, often seen purgatives given with the most baneful effects.

There is still another case of diarrhœa in which purgatives are pernicious; and that is, when the disease depends, as we have alleged it sometimes may, upon an erythematic inflammation of the intestines.

I need hardly add, that if there be a case of diarrhœa depending upon a laxity of the solids, purgatives cannot there be of any service, and may do much harm. Upon the whole, it will, I think, appear, that the use of purgatives in diarrhœa is very much limited; and that the promiscuous use of them, which has been so common, is injudicious, and often pernicious. I believe the practice has been chiefly owing to the use of purgatives in dysenteric cases, in which they are truly useful; because, contrary to the case of diarrhœa, there is in dysentery a considerable constriction of the intestines.

1502. Another set of remedies employed in diarrhœa are astringents. There has been some hesitation about the employment of these in recent cases, upon the supposition that they might occasion the retention of an acrid matter that should be thrown out. I cannot, however, well understand or assign the cases in which such caution is necessary; and I think that the power of astringents is seldom so great as to render their use very dangerous. The only difficulty which has occurred to me with respect to their use, has been to judge of the circumstances to which they are especially adapted. It appears to me to be only in those where the irritability of the intestines depends upon a loss of tone: and this, I think, may occur either from the debility of the whole system, or from causes acting on the intestines alone. All violent or long-continued spasmodic and convulsive affections of the intestinal canal necessarily induce a debility there; and such causes often take place from violent irritation, in colic, dysentery, cholera, and diarrhœa.

1503. The last of the remedies of diarrhœa that remain to be mentioned are opiates. The same objections have been made to the use of these, in recent cases of diarrhœa, as to that of astringents; but on no good grounds: for the effect of opiates, as astringents, is never very permanent; and an evacuation depending upon irritation, though it may be for some time suspended by opiates, yet always returns very soon. It is only by taking off irritability that opiates are useful in diarrhœa; and therefore, when the disease depends upon an increase of irritability alone, or when, though proceeding from irritation, that irritation is corrected or exhausted, opiates are the most useful and certain remedy. And though opiates are not suited to correct or remove an irritation applied, they are often of great benefit in suspending the effects of that irritation whenever these are violent: and, upon the whole, it will appear, that opiates may be very frequently, and with great propriety, employed in the cure of diarrhœa.

CHAP. XII.

OF THE DIABETES.

G. LXI. DIABETES.—*Urinæ plerumque præternaturalis, copia im- odica, profusio chronica.*

Sp. 1. *Diabetes (mellitus) cum urina odoris, coloris, et saporis mel- ci.*

Sp. 2. *Diabetes (insipidus) cum urina limpida non dulci.*

504. THIS disease consists in the voiding of an unusually rge quantity of urine.

As hardly any secretion can be increased without an increa- d action of the vessels concerned in it, and as some instances this disease are attended with affections manifestly spasmodic, have had no doubt of arranging the diabetes under the order Spasmi.

1505. This disease is always accompanied with a great degree of thirst, and therefore with the taking in of a great quantity of drink. This in some measure accounts for the very extraordinary quantities of urine voided; but still, independent of this, a peculiar disease certainly takes place, as the quantity of urine voided does almost always exceed the whole of the liquids, and sometimes the whole of both solids and liquids, taken in.

1506. The urine voided in this disease is always very clear, and at first sight appears entirely without any colour; but viewed in a certain light, it generally appears to be slightly tinged with a yellowish green, and in this respect has been very properly compared to a solution of honey in a large proportion of water.

Examined by the taste, it is very generally found to be more or less sweet; and many experiments that have now been made in different instances of the disease, show clearly that such urine contains, in considerable quantity, a saccharine matter, which appears to be very exactly of the nature of common sugar.

1507. Doctor Willis seems to me to have been the first who took notice of the sweetness of the urine in diabetes, and almos every physician of England has since taken notice of the same. It is to be doubted, indeed, if there is any case of idiopathi diabetes in which the urine is of a different kind. Though neither the ancients, nor, in the other countries of Europe, th moderns, till the latter were directed to it by the English, hav taken notice of the sweetness of the urine, it does not persuad me, that either in ancient or in modern times the urine in diabetes was of another kind. I myself, indeed, think I have me with one instance of diabetes in which the urine was perfectly insipid; and it would seem that a like observation had occurre to Dr Martin Lister. I am persuaded, however, that such instances are very rare; and that the other is by much the mor common, and perhaps the almost universal occurrence. I judge therefore, that the presence of such a saccharine matter may b considered as the principal circumstance in idiopathic diabetes and it gives at least the only case of that disease that I can properly treat of here, for I am only certain that what I am further to mention relates to such a case.

1508. The antecedents of this disease, and consequently the remote causes of it, have not been well ascertained. It may be true that it frequently happens to men who, for a long time before, had been intemperate in drinking; that it happens to persons of a broken constitution, or who, as we often express it, are in a cachectic state; that it sometimes follows intermittent fevers; and that it has often occurred from excess in the drinking of mineral waters. But none of these causes apply very generally to the cases that occur: such causes are not always, nor even frequently, followed by diabetes; and there are many instances of diabetes which could not be referred to any of them. In most of the cases of this disease which I have met with, I could not refer it to any particular cause.

1509. This disease commonly comes on slowly, and almost imperceptibly, without any previous disorder. It often arises to a considerable degree, and subsists long without being accompanied with evident disorder in any particular part of the system. The great thirst which always, and the voracious appetite which frequently occurs in it, are often the only remarkable symptoms. Under the continuance of the disease, the body is often greatly emaciated; and a great weakness also prevails. The pulse is commonly frequent; and an obscure fever is for the most part present. When the disease proves fatal, it generally ends with a fever, in many circumstances, particularly those of emaciation and debility, resembling a hectic.

1510. The proximate cause of this disease is not certainly or clearly known. It seems to have been sometimes connected with calculous affections of the kidneys; and it is possible, that an irritation applied there may increase the secretion of urine. It perhaps often does so; but how it should produce the singular change that takes place in the state of the urine, is not to be easily explained. It certainly often happens that calculous matters are long present in the urinary passages, without having any such effect as that of producing diabetes in any shape.

Some have supposed that the disease occurs from a relaxed state of the secretory vessels of the kidneys; and indeed the dissections of persons who had died of this disease have shown the kidneys in a very flaccid state. This, however, is probably to be considered as rather the effect than the cause of the disease.

That no topical affection of the kidneys has a share in producing this disease, and that a fault in the assimilation of the fluids is rather to be blamed, I conclude from hence, that even the solid food taken in, increases the quantity of the urine voided, at the same time with an increase of the saccharine matter above mentioned.

1511. The diabetes has been supposed to be owing to a certain state of the bile; and it is true, that this disease has sometimes occurred in persons who were at the same time affected with diseases of the liver: but this concurrence does not often take place; and the diabetes frequently occurs separately from any affection of the liver. In twenty instances of diabetes which I have seen, there was not in any one of them any evident affection of the liver.

The explanation that has been offered of the nature and operation of the bile, in producing diabetes, is very hypothetical, and nowise satisfying.

1512. As I have already said, I think it probable, that in most cases the proximate cause of this disease is some fault in the assimilatory powers, or in those employed in converting alimentary matters into the proper animal fluids. This I formerly hinted to Dr Dobson, and it has been prosecuted and published by him; but I must own, that it is a theory embarrassed with some difficulties which I cannot at present very well remove.

1513. The proximate cause of diabetes being so little known or ascertained, I cannot propose any rational method of cure in the disease. From the testimony of several authors, I believe that the disease has been cured: but I believe also, that this has seldom happened; and when the disease has been cured, I doubt much if it was effected by the several remedies to which these cures have been ascribed. In all the instances of this disease which I myself have seen, and in several others of which I have been informed, no cure of it has ever been made in Scotland, though many instances of it have occurred, and in most of them the remedies recommended by authors have been diligently employed. I cannot, therefore, with any advantage, enter into a detail of these remedies; and as the disease, together with its several circumstances, when they shall hereafter occur, is likely to become the subject of diligent investigation, I avoid going farther at present, and judge it prudent to suspend my opinion till I shall have more observations and experiments upon which I can form it more clearly.

CHAP. XIII.

OF THE HYSTERIA, OR THE HYSTERIC DISEASE.

G. LXII. HYSTERIA.—*Ventris murmura; sensus globi in abdomine se volventis, ad ventriculum et fauces ascendentis, ibique strangulantis; sopor; convulsiones; urinæ limpidæ copia profusa; animus, nec sponte, varius et mutabilis.*

1514. THE many and various symptoms which have been supposed to belong to a disease under this appellation, render it extremely difficult to give a general character or definition of it. It is, however, proper in all cases to attempt some general idea; and, therefore, by taking the most common form, and that concurrence of symptoms by which it is principally distinguished, I have formed a character in my system of Methodical Nosology, and shall here endeavour to illustrate it by giving a more full history of the phenomena.

1515. The disease attacks in paroxysms or fits. These commonly begin by some pain and fulness felt in the left side of the belly. From this a ball seems to move, with a grumbling noise, into the other parts of the belly, and, making as it were various convolutions there, seems to move into the stomach, and more distinctly still rises up to the top of the gullet, where it remains for some time, and by its pressure upon the larynx gives a sense of suffocation. By the time that the disease has proceeded thus far, the patient is affected with a stupor and insensibility, while at the same time the body is agitated with various convulsions. The trunk of the body is writhed to and fro, and the limbs are variously agitated; commonly the convulsive motion of one arm and hand, is that of beating, with the closed fist, upon the breast, very violently and repeatedly. This state continues for some time, and has during that time some remissions and renewals of the convulsive motions; but they at length cease, leaving the patient in a stupid and seemingly sleeping state. More or less suddenly, and frequently with repeated sighing and sobbing, together with a murmuring noise in the belly, the patient returns to the exercise of sense and motion, but generally without any recollection of the several circumstances that had taken place during the fit.

1516. This is the form of what is called an *hysteric paroxysm*, and is the most common form; but its paroxysms are considerably varied in different persons, and even in the same person at different times. It differs, by having more or fewer of the circumstances above mentioned; by these circumstances being more or less violent; and by the different duration of the whole fit.

Before the fit, there is sometimes a sudden and unusually large flow of limpid urine. At the coming on of the fit, the stomach is sometimes affected with vomiting, the lungs with considerable difficulty of breathing, and the heart with palpitations. During the fit, the whole of the belly, and particularly the navel, is drawn strongly inwards; the sphincter ani is sometimes so firmly constricted as not to admit a small glyster-pipe, and there is at the same time an entire suppression of urine. Such fits are, from time to time, ready to recur; and during the intervals, the patients are liable to involuntary motions, to fits of laughing and crying, with sudden transitions from the one to the other; while sometimes false imaginations, and some degree of delirium, also occur.

1517. These affections have been supposed peculiar to the female sex; and indeed they most commonly appear in females: but they sometimes, though rarely, attack also the male sex; never, however, that I have observed, in the same exquisite degree.

In the female sex, the disease occurs especially from the age of puberty to that of thirty-five years; and though it does sometimes, yet very seldom appears before the former or after the latter of these periods.

At all ages, the time at which it most readily occurs is that of the menstrual period.

The disease more especially affects the females of the most exquisitely sanguine and plethoric habits, and frequently affects those of the most robust and masculine constitutions.

It affects the barren more than the breeding women, and therefore frequently young widows.

It occurs especially in those females who are liable to the Nymphomania; and the Nosologists have properly enough marked one of the varieties of this disease by the title of *Hysteria Libidinosa.*

In the persons liable to the fits of this disease, it is readily excited by the passions of the mind, and by every considerable emotion, especially those brought on by surprise.

The persons liable to this disease acquire often such a degree of sensibility, as to be strongly affected by every impression that comes upon them by surprise.

1518. In this history, there appears to be a concurrence of symptoms and circumstances properly marking a very particular disease, which I think may be distinguished from all others. It seems to me to have been improperly considered by physicians as the same with some other diseases, and particularly with hypochondriasis. The two diseases may have some symptoms in common, but for the most part are considerably different.

Spasmodic affections occur in both diseases; but neither so frequently, nor to so great a degree in hypochondriasis as in hysteria.

Persons liable to hysteria are sometimes affected at the same time with dyspepsia. They are often, however, entirely free from it; but I believe this never happens to persons affected with hypochondriasis.

These different circumstances mark some difference in the two diseases; but they are still more certainly distinguished by the temperament they attack, and by the time of life at which they appear to be most exquisitely formed.

It has been generally supposed, that the two diseases differ only in respect of their appearing in different sexes; but this is not well founded: for although the hysteria appears most commonly in females, the male sex is not absolutely free from it, as I have observed above; and although the hypochondriasis may be most frequent in men, the instances of it in the female sex are very common.

1519. From all these considerations, it must, I think, appear that the hysteria may be very well and properly distinguished from hypochondriasis.

Further, it seems to me to have been with great impropriety, that almost every degree of the irregular motions of the nervous system has been referred to the one or other of these two diseases. Both are marked by a peculiarity of temperament, as well as by certain symptoms commonly accompanying that; but some of these, and many others usually marked by the name of nervous symptoms, may, from various causes, arise in temperaments different from that which is peculiar to either hysteria or hypochondriasis, and without being joined with the peculiar symptoms of either the one or the other disease: so that the appellations of Hysteric and Hypochondriac are very inaccurately applied to them. Under what view these symptoms are otherwise to be considered, I am not ready to determine; but must remark, that the appellation of Nervous Diseases is too vague and undefined to be of any useful application.

1520. Having thus endeavoured to distinguish hysteria from every other disease, I shall now attempt its peculiar pathology. With respect to this, I think it will, in the first place, be obvious, that its paroxysms begin by a convulsive and spasmodic affection of the alimentary canal, which is afterwards communicated to the brain, and to a great part of the nervous system. Although the disease appears to begin in the alimentary canal, yet the connection which the paroxysms so often have with the menstrual flux, and with the diseases that depend on the state of the genitals, shows, that physicians have at all times judged rightly in considering this disease as an affection of the uterus and other parts of the genital system.

1521. With regard to this, however, I can go no farther. In what manner the uterus, and in particular the ovaria, are affected in this disease; how the affection of these is communicated with particular circumstances to the alimentary canal; or how the affection of this, rising upwards, affects the brain, so as to occasion the particular convulsions which occur in this disease, I cannot pretend to explain.

But although I cannot trace this disease to its first causes, or explain the whole of the phenomena; I hope, that with respect to the general nature of the disease, I may form some general conclusions, which may serve to direct our conduct in the cure of it.

1522. Thus, from a consideration of the predisponent and occasional causes, it will, I think, appear, that the chief part of the proximate cause is a mobility of the system, depending generally upon its plethoric state.

1523. Whether this disease ever arises from a mobility of the system, independent of any plethoric state of it, I cannot positively determine; but in many cases that have subsisted for some time, it is evident that a sensibility, and consequently a mobility, are acquired, which often appear when neither a general plethora can be supposed to subsist, nor an occasional turgescence to have happened. However, as we have shown above, that a distention of the vessels of the brain seems to occasion epilepsy, and that a turgescence of the blood in the vessels of the lungs seems to produce asthma; so analogy leads me to suppose, that a turgescence of blood in the uterus, or in other parts of the genital system, may occasion the spasmodic and convulsive motions which appear in hysteria. It will at the same time be evident, that this affection of the genitals must especially occur in plethoric habits; and every circumstance mentioned in the history of the disease serves to confirm this opinion with respect to its proximate cause.

1524. From this view of the subject, the analogy of hysteria and epilepsy will readily appear; and why, therefore, I am to say that the indications of cure are the same in both.

As the indications, so the several means of answering them, are so much the same in both diseases, that the same observations and directions, with regard to the choice and employment of these remedies, that have been delivered above on the subject of epilepsy, will apply pretty exactly to hysteria; and therefore need not be repeated here.

CHAP. XIV.

OF CANINE MADNESS AND HYDROPHOBIA.

G. LXIII. HYDROPHOBIA.—*Potionis cujuslibet, utpote convulsionem pharyngis dolentem cientis, fastidium et horror; plerumque e morsu animalis rabidi.*

Sp. 1. *Hydrophobia (rabiosa) cum mordendi cupiditate ex morsu animalis rabidi.*

Sp. 2. *Hydrophobia (simplex) sine rabie, vel mordendi cupiditate.*

1525. THIS disease has been so exactly and fully described in books that are in every body's hands, that it is on no account necessary for me to give any history of it here; and with respect to the pathology of it, I find that I can say nothing satisfying to myself, or that I can expect to prove so to others. I find also, with respect to the cure of this disease, that there is no subject in which the fallacy of experience appears more strongly than in this. From the most ancient to the present times, many remedies for preventing and curing this disease have been recommended under the sanction of pretended experience, and have perhaps also kept their credit for some time: but succeeding times have generally, upon the same ground of experience, destroyed that credit entirely; and most of the remedies formerly employed are now fallen into absolute neglect. In the present age, some new remedies have been proposed, and have experience alleged to vouch for their efficacy; but many doubts still remain with respect to this: and though I cannot determine in this matter from my own experience, I think it incumbent on me to give the best judgment I can form with respect to the choice of the remedies at present recommended.

1526. I am, in the first place, firmly persuaded, that the most certain means of preventing the consequences of the bite, is to cut out, or otherwise destroy the part in which the bite has been made. In this every body agrees; but with this difference, that some are of opinion that it can only be effectual when it is done very soon after the wound has been made, and they therefore neglect it when this opportunity is missed. There have been, however, no experiments made proper to determine this matter; and there are many considerations which lead me to think that the poison is not immediately communicated to the system; and therefore, that this measure of destroying the part may be practised with advantage, even many days after the bite has been given.

1527. Whilst the state of our experience, with respect to several remedies now in use, is uncertain, I cannot venture to assert that any of these is absolutely ineffectual; but I can give it as my opinion, that the efficacy of mercury, given very largely, and persisted in for a long time, both as a means of preventing the disease, and of curing it when it has actually come on, is better supported by experience than that of any other remedy now proposed, or commonly employed.

BOOK IV.

OF VESANIÆ,

OR OF THE DISORDERS OF THE INTELLECTUAL FUNCTIONS.

ORD. IV. VESANIÆ.

Mentis judicantis functiones læsæ sine pyrexia vel comate.

G. LXIV. AMENTIA.—*Mentis judicantis imbecillitas, qua homines rerum relationes, vel non percipiunt, vel non reminiscuntur.*

Sp. 1. *Amentia (congenita) a nativitate constans.*

Sp. 2. *Amentia (senilis) ex perceptione et memoria, ingravescente ætate, imminutis.*

Sp. 3. *Amentia (acquisita) a causis externis evidentibus, in hominibus sanæ mentis superveniens.*

CHAP. I.

OF VESANIÆ IN GENERAL.

1528. THE Nosologists, Sauvages and Sagar, in a class of diseases under the title of VESANIÆ, have comprehended the two orders of *Hallucinationes*, or False Perceptions, and of *Morositates*, or Erroneous Appetites and Passions; and in like manner, Linnæus in his class of MENTALES, corresponding to the Vesaniæ of Sauvages, has comprehended the two orders of *Imaginarii* and *Pathetici*, nearly the same with the *Hallucinationes* and *Morositates* of that author. This, however, from several considerations, appears to me improper; and I have therefore formed a class of Vesaniæ, nearly the same with the Paranoiæ of Vogel, excluding from it the Hallucinationes and Morositates, which I have referred to the Morbi Locales. Mr Vogel has done the like, in separating from the Paranoiæ the false perceptions and erroneous appetites; and has thrown these into another class, to which he has given the title of Hyperæstheses.

1529. It is indeed true, that certain hallucinationes and morositates are frequently combined with what I propose to consider as strictly a vesania, or an erroneous judgment; and sometimes the hallucinationes seem to lay the foundation of, and to form almost entirely the vesania. But as most part of the hallucinationes enumerated by the Nosologists are affections purely topical, and induce no other error of judgment beside that which relates to the single object of the sense or particular organ affected; so these are certainly to be separated from the diseases which consist in a more general affection of the judgment. Even when the hallucinationes constantly accompany or seem to induce the vesania, yet being such as arise from internal causes, and may be presumed to arise from the same cause as the more general affection of the judgment, they are therefore to be considered as symptoms of this only.

In like manner I judge with respect to the morositates, or erroneous passions, that accompany vesania; which, as consequences of a false judgment, must be considered as arising from the same causes, and as symptoms only of the more general affection.

There is, indeed, one case of a morositas which seems to induce a vesania, or more general affection of the judgment; and this may lead us to consider the vesania, in this case, as a symptom of an erroneous appetite, but will not afford any good reason for comprehending the morositates in general under the vesaniæ, considered as primary diseases.

The limitation therefore of the class of Vesaniæ to the lesions of our judging faculty, seems from every consideration to be proper.

The particular diseases to be comprehended under this class, may be distinguished according as they affect persons in the time of waking or of sleeping. Those which affect men awake, may again be considered, as they consist in an erroneous judgment, to which I shall give the appellation of *Delirium;* or as they consist in a weakness or imperfection of judgment, which I shall name *Fatuity*. I begin with the consideration of Delirium.

1530. As men differ greatly in the soundness and force of their judgment, so it may be proper here to ascertain more precisely what error or imperfection of our judging faculty is to be considered as morbid, and to admit of the appellations of Delirium and Fatuity. In doing this, I shall first consider the norbid errors of judgment, under the general appellation of Delirium, which has been commonly employed to denote every node of such error.

1531. As our judgment is chiefly exercised in discerning and udging of the several relations of things, I apprehend that derium may be defined to be,—In a person awake, a false or nistaken judgment of those relations of things, which, as ocurring most frequently in life, are those about which the geneality of men form the same judgment; and particularly when he judgment is very different from what the person himself ad before usually formed.

1532. With this mistaken judgment of relations, there is equently joined some false perception of external objects, ithout any evident fault in the organs of sense, and which ems therefore to depend upon an internal cause; that is, upn the imagination, arising from a condition in the brain, prenting objects which are not actually present. Such false perptions must necessarily occasion a delirium, or an erroneous dgment, which is to be considered as the disease.

1533. Another circumstance, commonly attending delirium, is a very unusual association of ideas. As, with respect to most of the affairs of common life, the ideas laid up in the memory are, in most men, associated in the same manner; so a very unusual association, in any individual, must prevent his forming the ordinary judgment of those relations which are the most common foundation of association in the memory: and therefore this unusual, and commonly hurried, association of ideas, usually is, and may be considered as a part of delirium. In particular it may be considered as a certain mark of a general morbid affection of the intellectual organs, it being an interruption or perversion of the ordinary operations of memory, the common and necessary foundation of the exercise of judgment.

1534. A third circumstance attending delirium, is an emotion or passion, sometimes of the angry, sometimes of the timid kind; and, from whatever cause in the perception or judgment, it is not proportioned to such cause, either in the manner formerly customary to the person himself, or in the manner usual with the generality of other men.

1535. Delirium, then, may be more shortly defined,—In a person awake, a false judgment arising from perceptions of imagination, or from false recollection, and commonly producing disproportionate emotions.

Such delirium is of two kinds; as it is combined with pyrexia and comatose affections, or, as it is entirely without any suc combination. It is the latter case that we name *Insanity;* and i is this kind of delirium only, that I am to treat of here.

1536. Insanity may perhaps be properly considered as a genu comprehending many different species, each of which may de serve our attention; but before proceeding to the consideration o particular species, I think it proper to attempt an investigatio of the cause of insanity in general.

1537. In doing this, I shall take it for granted, as demonstra ted elsewhere, that although this disease seems to be chiefly, an sometimes solely, an affection of the mind; yet the connectio between the mind and body in this life is such, that these affec tions of the mind must be considered as depending upon a certain state of our corporeal part. See Halleri Prim. Lin. Physiolog. § 570. See Boerhaavii Inst. Med. § 581. 696.

1538. Admitting this proposition, I must in the next place assume another, which I likewise suppose to be demonstrated elsewhere. This is, that the part of our body more immediately connected with the mind, and therefore more especially concerned in every affection of the intellectual functions, is the common origin of the nerves; which I shall, in what follows, speak of under the appellation of the brain.

1539. Here, however, in assuming this last proposition, ı very great difficulty immediately presents itself. Alhough we cannot doubt that the operations of our inellect always depend upon certain motions taking place n the brain, (see Gaub. Path. Med. § 523.); yet these notions have never been the objects of our senses, nor ıave we been able to perceive that any particular part of the ırain has more concern in the operations of our intellect than ny other. Neither have we attained any knowledge of what hare the several parts of the brain have in that operation; and, herefore, in this situation of our science, it must be a very diffiult matter to discover those states of the brain that may give ocasion to the various state of our intellectual functions.

1540. It may be observed, that the different state of the moion of the blood in the vessels of the brain has some share in ffecting the operations of the intellect; and physicians, in seekıg for the causes of the different states of our intellectual funcons, have hardly looked further than into the state of the moon of the blood, or into the condition of the blood itself: but is evident that the operations of the intellectual functions rdinarily go on, and are often considerably varied, without our eing able to perceive any difference either in the motions or in ıe condition of the blood.

1541. Upon the other hand, it is very probable that the state the intellectual functions depends chiefly upon the state and condition of what is termed the Nervous power, or, as we suppose, of a subtile very moveable fluid, included or inherent, in a manner we do not clearly understand, in every part of the medullary substance of the brain and nerves, and which, in a living and healthy man, is capable of being moved from every one part to every other of the nervous system.

1542. With respect to this power, we have pretty clear proof that it frequently has a motion from the sentient extremities of the nerves towards the brain, and thereby produces sensation; and we have the same proof, that in consequence of volition, the nervous power has a motion from the brain into the muscles or organs of motion. Accordingly, as sensation excites our intellectual operations, and volition is the effect of these, and as the connection between sensation and volition is always by the intervention of the brain, and of intellectual operations; so we can hardly doubt, that these latter depend upon certain motions, and the various modification of these motions, in the brain.

1543. To ascertain the different states of these motions may be very difficult; and physicians have commonly considered it to be so very mysterious, that they have generally despaired o attaining any knowledge with regard to it: but I consider such absolute despair, and the negligence it inspires, to be always very blameable; and I shall now venture to go some length in the inquiry, hoping that some steps made with tolerable firmness, may enable us to go still further.

1544. To this purpose, I think it evident, that the nervou power, in the whole as well as in the several parts of the nervous system, and particularly in the brain, is at different time in different degrees of mobility and force. To these differen states, I beg leave to apply the terms of *Excitement* and *Collapse.* To that state in which the mobility and force are sufficient for the exercise of the functions, or when these states ar any way preternaturally increased, I give the name of *Excitement;* and to that state in which the mobility and force are no sufficient for the ordinary exercise of the functions, or when they are diminished from the state in which they had been before, I give the name of *Collapse.* I beg, however, it may be observed, that by these terms I mean to express matters of fact only; and without intending, by these terms, to explain the circumstance or condition, mechanical or physical, of the nervous power or fluid in these different states.

1545. That these different states of excitement and collapse take place on different occasions, must, I think, be manifest from numberless phenomena of the animal economy: but it is especially to our present purpose to observe, that the different states of excitement and collapse are in no instance more remarkable, than in the different states of waking and sleeping. In the latter, when quite complete, the motion and mobility of the nervous power, with respect to the whole of what are called the Animal Functions, entirely cease, or, as I would express it, are in a state of collapse; and are very different from the state of waking, which, in healthy persons, I would call a state of general and entire excitement.

1546. This difference in the states of the nervous power in sleeping and waking being admitted, I must, in the next place, observe, that when these states are changed from the one into the other, as commonly happens every day, the change is hardly ever made instantaneously, but almost always by degrees, and in some length of time only: and this may be observed with respect to both sense and motion. Thus, when a person is falling asleep, the sensibility is gradually diminished: so that, although some degree of sleep has come on, slight impressions will excite sensation, and bring back excitement; which the same, or even stronger impressions, will be insufficient to produce when the state of sleep has continued longer, and is, as we may say, more complete. In like manner, the power of voluntary motion is gradually diminished. In some members it fails sooner than in others; and it is some time before it becomes general and considerable over the whole.

The same gradual progress may be remarked in a person's coming out of sleep: The ears in this case are often awake before the eyes are opened or see clearly, and the senses are often awake before the power of voluntary motion is recovered; and it is curious to observe, that, in some cases, sensations may be excited without producing the ordinary association of ideas. See Mém. de Berlin, 1752.

1547. From all this, I think it will clearly appear, that not only the different states of excitement and collapse can take place in different degrees, but that they can take place in different parts of the brain, or, at least with respect to the different functions, in different degrees.

As I presume that almost every person has perceived the gradual approach of sleeping and waking, I likewise suppose every person has observed, that, in such intermediate state of unequal excitement, there almost always occurs more or less of delirium, or dreaming, if any body chooses to call it so. There are in this state false perceptions, false associations, false judgments, and disproportionate emotions; in short, all the circumstances by which I have above defined delirium.

This clearly shows, that delirium may depend, and I shall hereafter endeavour to prove that it commonly does depend, upon some inequality in the excitement of the brain; and that both these assertions are founded on this, that, in order to the proper exercise of our intellectual functions, the excitement must be complete, and equal in every part of the brain. For, though we cannot say that the vestiges of ideas are laid up in different parts of the brain, or that they are in some measure diffused over the whole, it will follow upon either supposition, that as our reasoning or intellectual operations always require the orderly and exact recollection or memory of associated ideas; so, if any part of the brain is not excited, or not excitable, that recollection cannot properly take place, while, at the same time, other parts of the brain, more excited and excitable, may give false perceptions, associations, and judgments.

1548. It will serve to illustrate this, that the collapse in sleep is more or less complete; or that the sleep, as we commonly speak, is more or less profound: and, therefore, that, in many cases, though sleep takes place to a considerable degree, yet certain impressions do still take effect, and excite motions, or, if you will, sensations, in the brain; but which sensations, upon account of the collapsed state of so great a part of the brain, are generally of the delirious kind, or dreams, consisting of false perceptions, associations, and judgments, that would have been corrected if the brain had been entirely excited.

Every one, I believe, has observed, that the most imperfect sleeps are those chiefly attended with dreaming; that dreams, therefore, most commonly occur towards morning, when the complete state of sleep is passing away; and, further, that dreams are most commonly excited by strong and uneasy impressions made upon the body.

I apprehend it may also be an illustration of the same thing, that, even in waking hours, we have an instance of an unequal state of excitement in the brain, producing delirium. Such, I think, occurs in the case of fever. In this, it is manifest, that the energy of the brain, or its excitement, is considerably diminished with respect to the animal functions: and it is accordingly upon this ground that I have explained above, in 45. the delirium which so commonly attends fever. To what I have there said, I shall here only add, that it may serve to confirm my doctrine, that the delirium in fever comes on at a certain period of the disease only, and that we can commonly discern its approach, by a more than usual degree of it appearing in the time of the patient's falling into or coming out of sleep. It appears, therefore, that delirium, when it first comes on in fever, depends upon an inequality of excitement; and it can hardly be doubted, that the delirium, which comes at length to prevail in the entirely weakened state of fevers, depends upon the same cause prevailing in a more considerable degree.

1549. From what has been now delivered, I hope it will be sufficiently evident, that delirium may be, and frequently is, occasioned by an inequality in the excitement of the brain.

How the different portions of the brain may at the same time be excited or collapsed in different degrees, or how the energy of the brain may be in different degrees of force, with respect to the several animal, vital, and natural functions, I cannot pretend to explain; but it is sufficiently evident in fact, that the brain may be at one and the same time in different conditions with respect to these functions. Thus in inflammatory diseases, when by a stimulus applied to the brain the force of the vital functions is preternaturally increased, that of the animal is either little changed, or considerably diminished. On the contrary, in many cases of mania, the force of the animal functions depending always on the brain, is prodigiously increased, while the state of the vital function in the heart is very little or not at all changed. I must therefore say again, that how difficult soever it may be to explain the mechanical or physical condition of the brain in such cases, the facts are sufficient to show that there is such an inequality as may disturb our intellectual operations.

1550. I have thus endeavoured to explain the general cause of Delirium: which is of two kinds; according as it is with or without pyrexia. Of the first I take no further notice here, having explained it as well as I could above in 45.

I proceed now to consider that delirium which properly belongs to the class of Vesaniæ, and which I shall treat of under the general title of *Insanity*.

1551. In entering upon this subject, it immediately occurs, that in many instances of insanity, we find upon dissection after death, that peculiar circumstances had taken place in the general condition of the brain. In many cases, it has been found of a drier, harder, and firmer consistence, than what it is usually of in persons who had not been affected with that disease. In other cases, it has been found in a more humid, soft, and flaccid state; and in the observations of the late Mr Meckel *, it has been found considerably changed in its density or specific gravity. Whether these different states have been observed to be uniformly the same over the whole of the brain, I cannot certainly learn; and I suspect the dissectors have not always accurately inquired into this circumstance: but in several instances, it appears that these states had been different in different parts of the brain; and instances of this inequality will afford a confirmation of our general doctrine.

The accurate Morgagni has observed, that in maniacal persons the medullary portion of the brain is unusually dry, hard, and firm: And this he had so frequently observed, that he was disposed to consider it as generally the case. But in most of the particular instances which he has given, it appears, that, for the most part, while the cerebrum was of an unusually hard and firm consistence, the cerebellum was of its usual softness, and in many of the cases it was unusually soft and flaccid. In some other cases, Morgagni observes, that while a part of the cerebrum was harder and firmer than ordinary, other parts of it were preternaturally soft.

1552. These observations tend to confirm our general doctrine: and there are others which I think will apply to the same purpose.

Upon the dissection of the bodies of persons who had laboured under insanity, various organic affections have been discovered in particular parts of the brain; and it is sufficiently probable, that such organic affections might have produced a different degree of excitement in the free and affected parts, and must have interrupted in some measure the free communication be-

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* Mémoir. de Berlin pour l'année 1764. It appeared in many instances of insane persons, that the medullary substance of the cerebrum was drier, and of a less specific gravity, than in persons who had been always of a sound judgment.

tween the several parts of the brain, and in either way have occasioned insanity.

There have occurred so many instances of this kind, that I believe physicians are generally disposed to suspect organic lesions of the brain to exist in almost every case of insanity.

1553. This, however, is probably a mistake; for we know that there have been many instances of insanity from which the persons have entirely recovered; and it is difficult to suppose that any organic lesions of the brain had in such case taken place. Such transitory cases, indeed, render it probable, that a state of excitement, changeable by various causes, had been the cause of such instances of insanity.

1554. It is indeed further asserted, that in many instances of insane persons, their brain had been examined after death without showing that any organic lesions had before subsisted in the brain, or finding that any morbid state of the brain then appeared. This, no doubt, may serve to show that organic lesions had not been the cause of the disease; but it does not assure us that no morbid change had taken place in the brain: for it is probable, that the dissectors were not always aware of its being the general condition of hardness and density, as different in different parts of the brain, that was to be attended to, in order to discover the cause of the preceding disease; and therefore many of them had not with this view examined the state of the brain, as Morgagni seems carefully to have done.

1555. Having thus endeavoured to investigate the cause of insanity in general, it were to be wished that I could apply the doctrine to the distinguishing the several species of it, according as they depend upon the different state and circumstances of the brain, and thereby to the establishing of a scientific and accurately adapted method of cure. These purposes, however, appear to me to be extremely difficult to be attained; and I cannot hope to execute them here. All I can do is to make some attempts, and offer some reflections, which further observation, and greater sagacity, may hereafter render more useful.

1556. The ingenious Dr Arnold has been commendably employed in distinguishing the different species of insanity as they appear with respect to the mind; and his labours may hereafter prove useful, when we shall come to know something more of the different states of the brain corresponding to these different states of the mind; but at present I can make little application of his numerous distinctions. It appears to me that he has chiefly pointed out and enumerated distinctions, that are merely varieties, which can lead to little or no variety of practice: and I am especially led to form the latter conclusion, because these varieties appear to me to be often combined together, and to be often changed into one another, in the same person; in whom we must therefore suppose a general cause of the disease, which, so far as it can be known, must establish the pathology, and especially direct the practice.

1557. In my limited views of the different states of insanity, I must go on to consider them under the two heads of Mania and Melancholia: and though I am sensible that these two genera do not comprehend the whole of the species of insanity, I am not clear in assigning the other species, which may not be comprehended under those titles. I shall, however, endeavour, on proper occasions as I go along, to point them out as well as I can.

CHAP. II.

OF MANIA, OR MADNESS.

G. LXVI. MANIA.—*Insania universalis.*

Sp. 1. *Mania (mentalis) omnino a pathemate mentis.*

Sp. 2. *Mania (corporea) a vitio corporis evidente.*

Sp. 3. *Mania (obscura) prægresso nullo vel pathemate mentis, vel vitio corporis evidente.*

1558. THE circumstances which I have mentioned above in 1535. as constituting delirium in general, do more especially belong to that kind of it which I shall treat of here under the title of MANIA.

There is sometimes a false perception or imagination of things present that are not; but this is not a constant, nor even a frequent attendant of the disease. The false judgment is of relations long before laid up in the memory. It very often turns upon one single subject: but more commonly the mind rambles from one subject to another, with an equally false judgment concerning the most part of them; and as at the same time there is commonly a false association, this increases the confusion of ideas, and therefore the false judgments. What for the most part more especially distinguishes the disease, is a hurry of mind, in pursuing any thing like a train of thought, and in running from one train of thought to another. Maniacal persons are in general very irascible: but what more particularly produces their angry emotions is, that their false judgments leading to some action which is always pushed with impetuosity and violence; when this is interrupted or restrained, they break out into violent anger and furious violence against every person near them, and upon every thing that stands in the way of their impetuous will. The false judgment often turns upon a mistaken opinion of some injury supposed to have been formerly received, or now supposed to be intended: and it is remarkable, that such an opinion is often with respect to their former dearest friends and relations; and therefore their resentment and anger is particularly directed towards these. And although this should not be the case, they commonly soon lose that respect and regard which they formerly had for their friends and relations. With all these circumstances, it will be readily perceived, that the disease must be attended very constantly with that incoherent and absurb speech we call raving. Further, with the circumstances mentioned, there is commonly joined an unusual force in all the voluntary motions; and an insensibility or resistance of the force of all impressions, and particularly a resistance of the powers of sleep, of cold, and even of hunger; though indeed in many instances a voracious appetite takes place.

1559. It appears to me, that the whole of these circumstances and symptoms point out a considerable and unusual excess in the excitement of the brain, especially with respect to the animal functions; and it appears at the same time to be manifestly in some measure unequal, as it very often takes place with respect to these functions alone, while at the same time the vital and natural are commonly very little changed from their ordinary healthy state.

1560. How this excess of excitement is produced, it may be difficult to explain. In the various instances of what Sauvages has named the Mania *Metastatica*, and in all the instances I have mentioned in my Nosology under the title of the Mania *Corporea*, it may be supposed that a morbid organic affection is produced in some part of the brain; and how that may produce an increased or unequal excitement in certain parts of it, I have endeavoured to explain above in 1552. But I must at the same time acknowledge, that such remote causes of mania have very rarely occurred; and that therefore some other causes of the disease must be sought for.

The effects of violent emotions or passions of the mind have more frequently occurred as the remote causes of mania; and it is sufficiently probable that such violent emotions, as they do often immediately produce a temporary increase of excitement, so they may, upon some occasions of their permanent inherence or frequent repetition, produce a more considerable and more permanent excitement, that is, a mania.

With respect to those causes of mania which arise in consequence of a melancholia which had previously long subsisted; whether we consider that melancholia as a partial insanity, or as a long persisting attachment to one train of thinking, it will be readily perceived, that in either case such an increase of excitement may take place in so considerable a degree, and in so large a portion of the brain, as may give occasion to a complete mania.

1561. These considerations with regard to the remote causes, appear to me to confirm sufficiently our general doctrine of increased and unequal excitement in the mania which I have described above, but I must own, that I have not exhausted the subject, and that there are cases of mania of which I cannot assign the remote causes: but, although I cannot in all cases explain in what manner the mania is produced, I presume, from the explanation given, and especially from the symptoms enumerated above, to conclude, that the disease described above depends upon an increased excitement of the brain; an opinion in which I am the more confirmed, as I think it will point out the proper method of cure. At least I think it will most clearly explain the operation of those remedies, which, so far as I can learn from my own experience and that of others, have proved the most successful in this disease; and, to illustrate this, I now enter upon the consideration of these remedies, and to make some remarks upon the proper manner of employing them.

1562. Restraining the anger and violence of madmen is always necessary for preventing their hurting themselves or others; but this restraint is also to be considered as a remedy. Angry passions are always rendered more violent by the indulgence of the impetuous motions they produce; and even in madmen the feeling of restraint will sometimes prevent the efforts which their passion would otherwise occasion. Restraint, therefore, is useful, and ought to be complete; but it should be executed in the easiest manner possible for the patient, and the strait waistcoat answers every purpose better than any other that has yet been thought of. The restraining madmen by the force of other men, as occasioning a constant struggle and violent agitation, is often hurtful. Although, on many occasions, it may not be safe to allow maniacs to be upon their legs or to walk about, it is never desirable to confine them to a horizontal situation; and whenever it can be admitted, they should be more or less in an erect posture. Although there may be no symptoms of any preternatural fulness or increased impetus of blood in the vessels of the brain, a horizontal posture always increases the fulness and tension of these vessels, and may thereby increase the excitement of the brain.

1563. The restraint mentioned requires confinement within doors, and it should be in a place which presents as few objects of sight and hearing as possible; and particularly, it should be removed from the objects that the patient was formerly acquainted with, as these would more readily call up ideas and their various associations. It is for this reason that the confinement of madmen should hardly ever be in their usual habitation; or if they are, that their apartment should be stripped of all its former furniture. It is also for the most part proper, that maniacs should be without the company of any of their former acquaintance; the appearance of whom commonly excites emotions that increase the disease. Strangers may at first be offensive; but in a little time they come to be objects either of indifference or of fear, and they should not be frequently changed.

1564. Fear being a passion that diminishes excitement, may therefore be opposed to the excess of it; and particularly to the angry and irascible excitement of maniacs. These being more susceptible of fear than might be expected, it appears to me to have been commonly useful. In most cases it has appeared to me necessary to employ a very constant impression of fear; and therefore to inspire them with the awe and dread of some particular persons, especially of those who are to be constantly near them. This awe and dread is therefore, by one means or other, to be acquired; in the first place, by their being the authors of all the restraints that may be occasionally proper; but sometimes it may be necessary to acquire it even by stripes and blows. The former, although having the appearance of more severity, are much safer than strokes or blows about the head. Neither of them, however, should be employed further than seems very necessary, and should be trusted only to those whose discretion can be depended upon. There is one case in which they are superfluous; that is, when the maniacal rage is either not susceptible of fear, or incapable of remembering the objects of it; for in such instances, stripes and blows would be wanton barbarity. In many cases of a moderate disease, it is of advantage that the persons who are the authors of restraint and punishment should be upon other occasions the bestowers of every indulgence and gratification that is admissible; never, however, neglecting to employ their awe when their indulgence shall have led to any abuse.

1565. Although in mania, no particular irritation nor fulness of the system seem to be present, it is plain, that the avoiding all irritation and means of fulness is proper; and therefore, that a diet neither stimulating nor nourishing is commonly to be employed. As it may even be useful to diminish the fulness of the system, so both a low and a spare diet is likely in most cases to be of service.

1566. Upon the same principle, although no unusual fulness of the body be present, it may be of advantage to diminish even its ordinary fulness by different evacuations.

Blood-letting, in particular, might be supposed useful; and in all recent cases of mania it has been commonly practised, and I think with advantage; but when the disease has subsisted for some time, I have seldom found blood-letting of service. In those instances in which there is any frequency or fulness of pulse, or any marks of an increased impetus of the blood in the vessels of the head, blood-letting is a proper and even a necessary remedy. Some practitioners, in such cases, have preferred a particular manner of blood-letting, recommending arteriotomy, scarifying the hind-head, or opening the jugular vein; and where any fulness or inflammatory disposition in the vessels of the brain is to be suspected, the opening of the vessels nearest to them is likely to be of the greatest service. The opening, however, of either the temporal artery or the jugular vein in maniacal persons is very often inconvenient; and it may generally be sufficient to open a vein in the arm, while the body is kept in somewhat of an erect posture, and such a quantity of blood drawn as nearly brings on a deliquium animi, which is always a pretty certain mark of some diminution of the fulness and tension of the vessels of the brain.

1567. For the same purpose of taking off the fulness and tension of these vessels of the brain, purging may be employed; and I can in no other view understand the celebrated use of hellebore among the ancients. I cannot, however, suppose any specific power in hellebore; and can by no means find that, at least he black hellebore, so efficacious with us as it is said to have been at Anticyra. As costiveness, however, is commonly a very constant and hurtful attendant of mania, purgatives come to be sometimes very necessary; and I have known some benefit obained from the frequent use of pretty drastic purgatives. In this, however, I have been frequently disappointed; and I have found more advantage from the frequent use of cooling purgatives, particularly the soluble tartar, than from more drastic medicines.

1568. Vomiting has also been frequently employed in mania; and by determining powerfully to the surface of the body, it may possibly diminish the fulness and tension of the vessels, and thereby the excitement of the brain; but I have never carried the use of this remedy so far as might enable me to judge properly of its effects. Whether it may do harm by impelling the blood too forcibly into the vessels of the brain, or whether by its general agitation of the whole system it may remove that inequality of excitement which prevails in mania, I have not had experience enough to determine.

1569. Frequent shaving of the head has been found of service in mania, and by promoting perspiration it probably takes off from the excitement of the internal parts. This, however, it is likely, may be more effectually done by blistering, which more certainly takes off the excitement of subjacent parts. In recent cases it has been found useful by inducing sleep; and when it has that effect, the repetition of it may be proper: but in maniacal cases that have lasted for some time, blistering has not appeared to me to be of any service; and in such cases also I have not found perpetual blisters, or any other form of issue, prove useful.

1570. As heat is the principal means of first exciting the nervous system, and establishing the nervous power and vital principle in animals; so in cases of preternatural excitement, the application of cold might be supposed a proper remedy: but there are many instances of maniacs who have been exposed for a great length of time to a considerable degree of cold without having their symptoms anywise relieved. This may render in general the application of cold a doubtful remedy; but it is at the same time certain, that maniacs have often been relieved, and sometimes entirely cured, by the use of cold bathing, especially when administered in a certain manner.

This seems to consist, in throwing the madman into the cold water by surprise; by detaining him in it for some length of time; and pouring water frequently upon the head, while the whole of the body except the head is immersed in the water; and thus managing the whole process, so as that, with the assistance of some fear, a refrigerant effect may be produced. This, I can affirm, has been often useful; and that the external application of cold may be of service, we know farther, from the benefit which has been received in some maniacal cases from the application of ice and snow to the naked head, and from the application of the noted Clay Cap.

Warm bathing also has been recommended by some practical writers, and in some rigid melancholic habits it may possibly be useful, or as employed in the manner prescribed by some, of immersing the lower parts of the body in warm water, while cold water is poured upon the head and upper parts. Of this practice, however, I have had no experience; and in the common manner of employing warm bathing I have found it rather hurtful to maniacs.

1571. According to my supposition that the disease depends upon an increased excitement of the brain, especially with respect to the animal functions, opium, so commonly powerful in inducing sleep, or a considerable collapse as to these functions, should be a powerful remedy of mania. That it has truly proved such, I believe from the testimony of Bernard Huet, whose practice is narrated at the end of Wepferi Historia Apoplecticorum. I leave to my readers to study this in the work I have referred to, where every part of the practice is fully, and, as it appears to me, very judiciously delivered. I have never indeed carried the trial so far as seems to be requisite to an entire cure: but I have frequently employed in some maniacal cases, large doses of opium; and when they had the effect of inducing sleep, it was manifestly with advantage. At the same time, in some cases, from doubts, whether the disease might not depend upon some organic lesions of the brain, when the opium would be superfluous; and in other cases, from doubts, whether there might not be some inflammatory affection joined with the mania, when the opium would be hurtful; I have never pushed this remedy to the extent that might be necessary to make an entire cure.

1572. Camphire has been recommended as a remedy of mania, and there are instances alleged of its having performed an entire cure. As it appears from the experiments of Beccaria that this substance is possessed of a sedative and narcotic virtue, these cures are not altogether improbable; but in several trials, and even in large doses, I have found no benefit from it; and excepting those in the Philosophical Transactions, N0. 400. I have hardly met with any other testimonies in its favour.

1573. I have been informed that some maniacs have been cured by being compelled to constant and even hard labour; and as a forced attention to the conduct of any bodily exercise, is a very certain means of diverting the mind from pursuing any train of thought, it is highly probable that such exercise may be useful in many cases of mania.

I must conclude this subject with observing, that even in several cases of complete mania, I have known a cure take place in the course of a journey carried on for some length of time.

1574. These are the remedies which have been chiefly employed in the mania that has been above described, and I believe they have been employed promiscuously, without supposing that the mania was to be distinguished into different species. Indeed I am not ready to say how far it is to be so distinguished, but I shall offer one observation, which may possibly merit attention.

It appears to me, that there are two different cases of mania that are especially different, according to the original temperament of the persons whom the disease affects. It perhaps occurs most frequently in persons of a melancholic or atrabilarian temperament; but it certainly does also often occur in persons of that very opposite temperament which physicians have named the

Sanguine. According as the disease happens to occur in persons of the one or other of these temperaments, I apprehend it may be considered as of a different nature; and I believe, that accurate observation, employed upon a sufficient number of cases, would discern some pretty constant difference, either of the symptoms, or at least of the state of symptoms in the two cases. I imagine that false imaginations, particular aversions and resentments, are more fixed and steady in the melancholic than in the sanguine; and that somewhat inflammatory is more commonly joined with mania in the sanguine than in the melancholic. If such difference, however, does truly take place, it will be obvious that it may be proper to make some difference also in the practice. I am of opinion, that in the mania of sanguine persons, blood-letting, and other antiphlogistic measures are more proper, and have been more useful than in the melancholic. I likewise apprehend that cold bathing is more useful in the sanguine than in the melancholic: but I have not had experience enough to ascertain these points with sufficient confidence.

I have only to add this other observation, that maniacs of the sanguine temperament recover more frequently and more entirely than those of the melancholic.

CHAP. III.

OF MELANCHOLY, AND OTHER FORMS OF INSANITY.

G. LXV. MELANCHOLIA.—*Insania partialis sine dyspepsia.*

1575. MELANCHOLY has been commonly considered as a partial insanity; and as such it is defined in my Nosology: but I now entertain doubts if this be altogether proper. By a partial insanity, I understand a false and mistaken judgment upon one particular subject, and what relates to it; whilst, on every other subject, the person affected judges as the generality of other men do. Such cases have certainly occurred; but I believe few in which the partial insanity is strictly limited. In many cases of general insanity, there is one subject of anger or fear upon which the false judgment more particularly turns, or which is at least more frequently than any other, the prevailing object of delirium: and though from the inconsistency which this principal object of delirium must produce, there is therefore also a great deal of insanity with regard to most other objects; yet this last is in very different degrees, both in different persons, and in the same person at different times. Thus, persons considered as generally insane, will, however, at times, and in some cases, pretty constantly judge properly enough of present circumstances and incidental occurrences; though, when these objects engaging attention are not presented, the operations of imagination may readily bring back a general confusion, or recall the particular object of the delirium. From these considerations, I am inclined to conclude, that the limits between general and partial insanity, cannot always be so exactly assigned, as to determine when the partial affection is to be considered as giving a peculiar species of disease, different from a more general insanity.

1576. When insanity, neither strictly partial, nor entirely nor constantly general, occurs in persons of a sanguine temperament, and is attended with agreeable, rather than with angry or gloomy emotions, I think such a disease must be considered as different from the Mania described above; and also, though partial, must be held as different from the proper Melancholia to be mentioned hereafter.

1577. Such a disease, as different from those described 1554. requires, in my opinion, a different administration of remedies; and it will be proper for me to take particular notice of this here.

Although it may be necessary to restrain such insane persons as we have mentioned 1576. from pursuing the objects of their false imagination or judgment, it will hardly be requisite to employ the same force of restraint that is necessary in the impetuous and angry mania. It will be generally sufficient to acquire some awe over them, that may be employed, and sometimes even be necessary, to check the rambling of their imagination, and incoherency of judgment.

1578. The restraint just now mentioned as necessary, will generally require the patient's being confined to one place, for the sake of excluding the objects, and more particularly the persons, that might excite ideas connected with the chief objects of their delirium. At the same time, however, if it can be perceived there are objects or persons that can call off their attention from the pursuit of their own disordered imagination, and can fix it a little upon some others, these last may be frequently presented to them: and, for this reason, a journey, both by its having the effect of interrupting all train of thought, and by presenting objects engaging attention, may often be useful. In such cases also, when the insanity, though more especially fixed upon one mistaken subject, is not confined to this alone, but is further apt to ramble over other subjects with incoherent ideas, I apprehend the confining or forcing such persons to some constant uniform labour, may prove an useful remedy.

1579. When such cases as in 1576. occur in sanguine temperaments, and may therefore approach more nearly to Phrenitic Delirium; so, in proportion as the symptoms of this tendency are more evident and considerable, blood-letting and purging will be the more proper and necessary.

1580. To this species of insanity, when occurring in sanguine temperaments, whether it be more or less partial, I apprehend that cold-bathing is particularly adapted; while, in the partial insanity of melancholic persons, as I shall show hereafter, it is hardly admissible.

1581. Having thus treated of a species of insanity, different, in my apprehension, from both the Mania and Melancholia, I proceed to consider what seems more properly to belong to this last.

1582. The disease which I name Melancholia is very often partial insanity only. But as, in many instances, though th false imagination or judgment seems to be with respect to on subject only, yet it seldom happens that this does not produc much inconsistency in the other intellectual operations: An as, between a very general and a very partial insanity, there ar all the possible intermediate degrees, so it will be often difficult, or perhaps improper, to distinguish Melancholia by th character of Partial Insanity alone. If I mistake not, it mus be chiefly distinguished by its occurring in persons of melancholic temperament, and by its being always attended wit some seemingly groundless, but very anxious fear.

1583. To explain the cause of this, I must observe, tha persons of a melancholic temperament are, for the most part, of a serious thoughtful disposition, and disposed to fear and caution, rather than to hope and temerity. Persons of this cast are less moveable than others by any impressions, and are, therefore, capable of a closer or more continued attention to one particular object or train of thinking. They are even ready to be engaged in a constant application to one subject, and are remarkably tenacious of whatever emotions they happen to be affected with.

1584. These circumstances of the melancholic character seem clearly to show, that persons strongly affected with it may be readily seized with an anxious fear, and that this, when much indulged, as is natural to such persons, may easily grow into a partial insanity.

1585. Fear and dejection of mind, or a timid and desponding disposition, may arise in certain states, or upon certain occasions of mere debility; and it is upon this footing that I suppose it sometimes to attend dyspepsia. But, in these cases, I believe the despondent disposition hardly ever arises to a considerable degree, or proves so obstinately fixed as when it occurs in persons of a melancholic temperament. In these last, although the fear proceed from the same dyspeptic feelings as in he other case, yet it will be obvious, that the emotion may rise o a more considerable degree; that it may be more anxious, more fixed, and more attentive; and, therefore, may exhibit all he various circumstances which I have mentioned in 1222. to ake place in the disease named HYPOCHONDRIASIS.

1586. In considering this subject formerly, in distinguishing Dyspepsia from Hypochondriasis, although the symptoms affecting the body be very much the same in both, and even those affecting the mind be somewhat similar, I found no difficulty in distinguishing the latter disease, merely from its occurring in persons of a melancholic temperament. But I must now acknowledge, that I am at a loss to determine, how, in all cases, hypochondriasis and melancholia may be distinguished from one another, whilst the same temperament is common to both.

1587. I apprehend, however, that the distinction may be generally ascertained in the following manner:

The hypochondriasis I would consider as being always attended with dyspeptic symptoms; and, though there may be, at the same time, an anxious melancholic fear, arising from the feeling of these symptoms, yet, while this fear is only a mistaken judgment with respect to the state of the person's own health, and to the danger to be from thence apprehended, I would still consider the disease as a hypochondriasis, and as distinct from the proper melancholia. But when an anxious fear and despondency arises from a mistaken judgment with respect to other circumstances than those of health, and more especially when the person is, at the same time, without any dyspeptic symptoms, every one will readily allow this to be a disease widely different from both dyspepsia and hypochondriasis, and it is what I would strictly name Melancholia.

1588. In this there seems little difficulty; but as an exquisitely melancholic temperament may induce a torpor and slowness in the action of the stomach, so it generally produces some dyspeptic symptoms, and from thence there may be some difficulty in distinguishing such a case from hypochondriasis. Bu I would maintain, however, that when the characters of the temperament are strongly marked, and more particularly when the false imagination turns upon other subjects than that o health; or when, though relative to the person's own body, i is of a groundless and absurd kind; then, notwithstanding the appearance of some dyspeptic symptoms, the case is still to be considered as that of a melancholia, rather than a hypochondriasis.

1589. The disease of melancholia, therefore, manifestly depends upon the general temperament of the body: and although, in many persons, this temperament is not attended with any morbid affection either of mind or body; yet when it becomes exquisitely formed, and is in a high degree, it may become a disease affecting both, and particularly the mind. It will therefore be proper to consider in what this melancholic temperament especially consists: and to this purpose, it may be observed, that in it there is a degree of torpor in the motion of the nervous power, both with respect to sensation and volition; that there is a general rigidity of the simple solids; and that the balance of the sanguiferous system is upon the side of the veins. But all these circumstances are the directly opposite of those of the sanguine temperament; and must therefore also produce an opposite state of mind.

1590. It is this state of the mind, and the state of the brain corresponding to it, that is the chief object of our present consideration. But what that state of the brain is will be supposed to be difficult to explain; and it may perhaps seem rash in me to attempt it.

I will, however, venture to say, that it is probable the melancholic temperament of mind depends upon a drier and firmer texture in the medullary substance of the brain; and that this perhaps proceeds from a certain want of fluid in that substance, which appears from its being of a lesser specific gravity than usual. That this state of the brain in melancholia does actu-

ly exist, I conclude, *first*, from the general rigidity of the
hole habit; and, *secondly*, from dissections, showing such a
ate of the brain to have taken place in mania, which is often
other that a higher degree of melancholia. It does not ap-
ar to me anywise difficult to suppose, that the same state of
e brain may in a moderate degree give melancholia, and in a
gher that mania which melancholia so often passes into;
pecially if I shall be allowed further to suppose, that either a
eater degree of firmness in the substance of the brain may
nder it susceptible of a higher degree of excitement, or that
e portion of the brain may be liable to acquire a greater
rmness than others, and consequently give occasion to that
equality of excitement, upon which mania so much depends.

1591. I have thus endeavoured to deliver what appears to
e most probable with respect to the proximate cause of me-
ncholia; and although the matter should in some respects re-
ain doubtful, I am well persuaded that these observations
ay often be employed to direct our practice in this disease, as
shall now endeavour to show.

1592. In most of the instances of melancholia, the mind is
be managed very much in the same manner as I have ad-
ised above with regard to hypochondriasis; but as in the case
f proper melancholia, there is commonly a false imagination
r judgment appearing as a partial insanity, it may be further
ecessary in such cases to employ some artifices for correcting
uch imagination or judgment.

1593. The various remedies for relieving the dyspeptic symp-
oms which always attend hypochondriasis, will seldom be
ither requisite or proper in melancholia.

There is only one of the dyspeptic symptoms, which, though
ere should be no other, is very constantly present in melan-
holia, and that is costiveness. This it is always proper and e-
en necessary to remove; and I believe it is upon this account
at the use of purgatives has been found so often useful in me-
ncholia. Whether there be any purgatives peculiarly proper

in this case, I dare not positively determine; but with respe to the choice of purgatives in melancholia, I am of the sar opinion that I delivered above on this same subject with respe to mania.

1594. With respect to other remedies, I judge that bloo letting will more seldom be proper in melancholia than mania; but how far it may be in any case proper, must be d termined by the same considerations as in the case of mania.

1595. The cold bathing that I judged to be so very useful several cases of insanity, is, I believe, in melancholia, hard ever fit to be admitted; at least while this is purely a part affection, and without any marks of violent excitement. (the contrary, upon account of the general rigidity prevaili in melancholia it is probable that warm bathing may be oft useful.

1596. With respect to opiates which I have supposed mig often be useful in cases of mania, I believe they can seldom properly employed in the partial insanities of the melanchol except in certain instances of violent excitement, when the m lancholia approaches nearly to the state of mania.

1597. In such cases of melancholia approaching to a state mania, a low diet may sometimes be necessary; but as the er ploying a low diet almost unavoidably leads to the use of veg table food, and as this in every torpid state of the stomach ready to produce some dyspeptic symptoms, such vegetab food ought, in moderate cases of melancholia, to be used wi some caution.

Though exercise, as a tonic power, is not proper either hypochondriasis or melancholia; yet, with respect to its effec upon the mind, it may be extremely useful in both, and in m lancholia is to be employed in the same manner that I have a vised above in the case of hypochondriasis.

1598. Having now delivered my doctrine with respect to tl chief forms of insanity, I should in the next place proceed nsider the other genera of Amentia and Oneirodynia, which the Nosology I have arranged under the order of Vesaniæ; t as I cannot pretend to throw much light upon these subts, and as they are seldom the objects of practice, I think allowable for me to pass them over at present; and the parular circumstances of this work in some measure require at I should do so.

PART III.

OF CACHEXIES.

Cl. III. CACHEXIÆ.

Totius vel magnæ partis corporis habitus depravatus; sine pyre primaria vel neurosi.

INTRODUCTION.

1599. Under this title I propose to establish a class of di eases, which consist in a depraved state of the whole, or of considerable part of the habit of the body, without any prima pyrexia or neurosis combined with that state.

1600. The term *Cachexy* has been employed by Linnæ and Sagar, as it had been formerly by other authors, for t name of a particular disease: but the disease to which the authors have affixed it, comes more properly under another a pellation; and the term of *Cachexy* is more justly employed b Sauvages and Sagar for the name of a class. In this I hav followed the last-mentioned Nosologists, though I find it diff cult to give such a character of the class as will clearly appl to all the species I have comprehended under it. This diff culty would be still greater, if in the class I have establishe under the title of *Cachexies*, I were to comprehend all the di eases that those other nosologists have done; but I am willin to be thought deficient rather than very incorrect. Those dif ficulties, however, which still remain in methodical nosolog

Colleg. Glasg.

must not affect us much in a treatise of practice. If I can here roperly distinguish and describe the several species that truly nd most commonly exist, I shall be the less concerned about he accuracy of my general classification; though at the same me this, I think, is always to be attempted; and I shall pursue it as well as I can.

BOOK I.

OF EMACIATIONS.

ORD. I. MARCORES.

Corporis totius macies.

G. LXVIII. Tabes.—*Marcor ; asthenia ; pyrexia hectica.*

Sp. 1. *Tabes (purulenta) ex ulcere externo vel interno, vel ex vomica.*

Sp. 2. *Tabes (scrophulosa) in corporibus scrophulosis.*

Sp. 3. *Tabes (venenata) a veneno ingesto.*

G. LXIX. Atrophia.—*Marcor et asthenia, sine pyrexia hectica.*

Sp. 1. *Atrophia (inanitorum) ex evacuatione nimia.*

Sp. 2. *Atrophia (famelicorum) a nutrimento deficiente.*

Sp. 3. *Atrophia (cacochymica) a nutrimento corrupto.*

Sp. 4. *Atrophia (debilium) a nutritionis functione depravata, prægressa nulla vel evacuatione nimia, vel cacochymia.*

1601. Emaciation, or a considerable diminution of the bulk or plumpness of the whole body, is for the most part only a symptom of disease, and very seldom to be considered as a primary and idiopathic affection. Upon this account, according to my general plan, such a symptom might perhaps have been omitted in the Methodical Nosology: but both the uncertainty of concluding it to be always symptomatic, and the consistency of system, made me introduce into the Nosology, as others had done, an order under the title of *Marcores*, and this renders it requisite now to take some notice of such diseases.

1602. Upon this occasion, therefore, I hope it may be useful to investigate the several causes of emaciation in all the different cases of disease in which it appears. And this I attempt, as the surest means of determining how far it is a primary, or a symptomatic affection only; and even in the latter view, the investigation may be attended with some advantage.

1603. The causes of emaciation may, I apprehend, be referred to two general heads; that is, either to a general deficiency of fluid in the vessels of the body, or to the particular deficiency of the oil in the cellular texture of it. These causes are frequently combined together; but it will be proper, in the first place, to consider them separately.

1604. As a great part of the body of animals is made up of vessels filled with fluids, the bulk of the whole must depend very much on the size of these vessels, and the quantity of fluids present in them: and it will therefore be sufficiently obvious, that a deficiency of the fluids in these vessels must, according to its degree, occasion a proportionate diminution of the bulk of the whole body. This, however, will appear still more clearly, from considering, that in the living and sound body the vessels every where seem to be preternaturally distended by the quantity of fluids present in them; but being at the same time elastic, and constantly endeavouring to contract themselves, they must, on the withdrawing of the distending force, or, in other words, upon a diminution of the quantity of fluids, be in proportion contracted and diminished in their size: And it may be further observed, that as each part of the vascular system communicates with every other part of it; so every degree of diminution of the quantity of fluid, in any one part, must in proportion diminish the bulk of the vascular system, and consequently of the whole body.

1605. The diminution and deficiency of the fluids may be occasioned by different causes: such as, first, by a due quantity of of aliments not being taken in; or by the aliment taken in not being of a sufficiently nutritious quality. Of the want of a due quantity of aliment not being taken into the body, there is an instance in the *Atrophia lactantium* Sauvagesii, species 3.; and many other examples have occurred of emaciation from want of food, occasioned by poverty, and other accidental causes.

With respect to the quality of food, I apprehend it arises from the want of nutritious matter in the food employed, that persons living very entirely on vegetables are seldom of a plump and succulent habit.

1606. A second cause of the deficiency of fluids may be, the aliments taken in not being conveyed to the blood-vessels. This may occur from a person's being affected with a frequent vomiting; which, rejecting the food soon after it had been taken in, must prevent the necessary supply of fluids to the blood-vessels.

Another cause, frequently interrupting the conveyance of the alimentary matter into the blood-vessels, is an obstruction of the conglobate or lymphatic glands of the mesentery, through which the chyle must necessarily pass to the thoracic duct. Many instances of emaciation, seemingly depending upon this cause, have been observed by physicians, in persons of all ages, but especially in the young. It has also been remarked, that such cases have most frequently occurred in scrofulous persons, in whom the mesenteric glands are commonly affected with tumour or obstruction, and in whom, generally at the same time, scrofula appears externally. Hence the *Tabes scrophulosa Synop. Nosolog.* vol. ii. p. 266.: And under these I have put as synonymes, *Tabes glandularis*, sp. 10.; *Tabes mesenterica*, sp. 9.; *Scrophula mesenterica*, sp. 4.; *Atrophia infantilis*, sp. 13.; *Atrophia rachitica*, sp. 8.; *Tabes rachialgica*, sp. 16. At the same time, I have frequently found the case occurring in persons who did not show any external appearance of scrofula, but in whom the mesenteric obstruction was afterwards discovered by dissection. Such also I suppose to have been the case, in the disease frequently mentioned by authors under the title of the *Atrophia infantum.* This has received its name from the time of life at which it generally appears; but I have met with instances of it at fourteen years of age, ascertained by dissection. In several such cases which I have seen, the patients were without any scrofulous appearances at the time, or at any period of their lives before.

In the case of phthisical persons, I shall hereafter mention another cause of their emaciation; but it is probable that an obstruction of the mesenteric glands which so frequently happens in such persons, concurs very powerfully in producing the emaciation that takes place.

Although a scrofulous taint may be the most frequent cause of mesenteric obstructions, it is sufficiently probable that other kinds of acrimony may produce the same, and the emaciation that follows.

It may perhaps be supposed, that the interruption of the chyle's passing into the blood-vessels may be sometimes owing to a fault of the absorbents on the internal surface of the intestines. This, however, cannot be readily ascertained: but the interruption of the chyle's passing into the blood-vessels may certainly be owing to a rupture of the thoracic duct; which, when it does not prove soon fatal, by occasioning a hydrothorax, must in a short time produce a general emaciation.

1607. A third cause of the deficiency of the fluids may be a fault in the organs of digestion, as not duly converting the aliment into a chyle fit to form in the blood-vessels a proper nutritious matter. It is not, however, easy to ascertain the cases of emaciation which are to be attributed to this cause; but I apprehend that the emaciation which attends long subsisting cases of dyspepsia, or of hypochondriasis, is to be explained chiefly in this way. It is this which I have placed in the Nosology under the title of the *Atrophia debilium*; and of which the *Atrophia nervosa*, Sauv. sp. 1. is a proper instance, and therefore put there as a synonyme. But the other titles of *A*.

trophia lateralis, Sauv. sp. 15. and *Atrophia senilis*, Sauv. sp. 11. are not so properly put there, as they must be explained in a different manner.

1608. A fourth cause of a deficiency of the fluids in the body, may be excessive evacuations made from it by different outlets; and Sauvages has properly enumerated the following species, which we have put as synonymes under the title of *Atrophia inanitorum;* as, *Tabes nutricum*, sp. 4.; *Atrophia nutricum*, sp. 5.; *Atrophia à leucorrhœa*, sp. 4.; *Atrophia ab alvi fluxu*, sp. 6.; *Atrophia à ptyalismo*, sp. 7.; and, lastly, the *Tabes à sanguifluxu;* which, it is to be observed, may arise not only from spontaneous hæmorrhagies or accidental wounds, but also from blood-lettings in too large a quantity, and too frequently repeated.

Upon this subject it seems proper to observe, that a meagre habit of body frequently depends upon a full perspiration being constantly kept up, though at the same time a large quantity of nutritious aliment is regularly taken in.

1609. Besides this deficiency of fluids from evacuations by which they are carried entirely out of the body, there may be a deficiency of fluid and emaciation in a considerable part of the body, by the fluids being drawn into one part, or collected into one cavity; and of this we have an instance in the *Tabes à hydrope*, Sauv. sp. 5.

1610. In the Methodical Nosology, among the other synonymes of the *Atrophia inanitorum*, I have set down the *Tabes dorsalis;* but whether properly or not, I at present very much doubt. In the evacuation considered as the cause of this tabes, as the quantity evacuated is never so great as to account for a general deficiency of fluids in the body, we must seek for another explanation of it. And whether the effects of the evacuation may be accounted for, either from the quality of the fluid evacuated, or from the singularly enervating pleasure attending the evacuation, or from the evacuation's taking off the tension of parts, the tension of which has a singular power in supporting the tension and vigour of the whole body, I cannot positively determine; but I apprehend that upon one or other of these suppositions the emaciation attending the tabes dorsalis must be accounted for; and therefore that it is to be considered as an instance of the *Atrophia debilium*, rather than of the *Atrophia inanitorum*.

1611. A fifth cause of a deficiency of fluids and of emaciations in the whole or in a particular part of the body, may be the concretion of the small vessels, either not admitting of fluids, or of the same proportion as before; and this seems to me to be the case in the *Atrophia senilis*, Sauv. sp. 2. Or it may be a palsy of the larger trunks of the arteries rendering them unfit to propel the blood into the smaller vessels; as is frequently the case of paralytic limbs, in which the arteries are affected as well as the muscles. The *Atrophia lateralis*, Sauv. sp. 15. seems to be of this nature.

1612. A second general head of the causes of emaciation I have mentioned in 1602. to be a deficiency of oil. The extent and quantity of the cellular texture in every part of the body, and therefore how considerable a part it makes in the bulk of the whole, is now well known. But this substance, in different circumstances, is more or less filled with an oily matter; and therefore the bulk of it, and in a great measure that of the whole body, must be greater or less according as this substance is more or less filled in that manner. The deficiency of fluids, for a reason to be immediately explained, is generally accompanied with a deficiency of oil: but physicians have commonly attended more to the latter cause of emaciation than to the other, that being usually the most evident; and I shall now endeavour to assign the several causes of the deficiency of oil as it occurs upon different occasions.

1613. The business of secretion in the human body is in general little understood, and in no instance less so than in that of the secretion of oil from blood, which does not appear previously to have contained it. It is possible, therefore, that our theory of the deficiency of oil may be in several respects imperfect; but there are certain facts that may in the mean time apply to the present purpose.

1614. First, it is probable, that a deficiency of oil may be owing to a state of the blood in animal bodies less fitted to afford a secretion of oil, and consequently to supply the waste of it that is constantly made. This state of the blood must especially depend upon the state of the aliments taken in, as containing less of oil or oily matter. From many observations made, both with respect to the human body and to that of other animals, it appears pretty clearly, that the aliments taken in by men and domestic animals, according as they contain more of oil, are in general more nutritious, and in particular are better fitted to fill the cellular texture of their bodies with oil. I might illustrate this, by a minute and particular consideration of the difference of alimentary matters employed; but it will be enough to give two instances. The one is, that the herbaceous part of vegetables does not fatten animals, so much as the seeds of vegetables, which manifestly contain in any given weight a greater proportion of oil; and a second instance is, that in general vegetable aliments do not fatten men so much as animal food, which generally contains a larger proportion of oil.

It will be obvious, that upon the same principles a want of food, or a less nutritious food, may not only occasion a general deficiency of fluids (1604.), but must also afford less oil, to be poured into the cellular texture. In such cases, therefore, the emaciation produced is to be attributed to both these general causes.

1615. A second case of the deficiency of oil may be explained in this manner. It is pretty manifest that the oil of the blood is secreted and deposited in the cellular texture in greater or less quantity, according as the circulation of the blood is faster or slower; and therefore that exercise, which hastens the circulation of the blood, is a frequent cause of emaciation. Exercise produces this effect in two ways. 1st, By increasing the perspiration, and thereby carrying off a greater quantity of the nutritious matter, it leaves less of it to be deposited in the cellular texture, thereby not only preventing an accumulation of fluids, but, as I have said above, causing a general deficiency of these, which must also cause a deficiency of oil in the cellular texture. 2dly, It is well known, that the oil deposited in the cellular texture is upon many occasions, and for various purposes of the economy, again absorbed, and mixed or diffused in the mass of blood, to be from thence perhaps carried entirely out of the body by the several excretions. Now, among other purposes of the accumulation and re-absorption of oil, this seems to be one, that the oil is requisite to the proper action of the moving fibres in every part of the body; and therefore that nature has provided for an absorption of oil to be made according as the action of the moving fibres may demand it. It will thus be obvious, that the exercise of the muscular and moving fibres every where must occasion an absorption of oil; and consequently that such exercise not only prevents the secretion of oil, as has been already said, but may also cause a deficiency of it, by occasioning an absorption of what had been deposited; and in this way, perhaps especially, does it produce emaciation.

1616. A third case of the deficiency of oil may occur from the following cause. It is probable, that one purpose of the accumulation of oil in the cellular texture of animals is, that it may, upon occasion, be again absorbed from thence, and carried into the mass of blood, for the purpose of enveloping and correcting any unusual acrimony arising and existing in the state of the fluids. Thus, in most instances in which we can discern an acrid state of the fluids, as in scurvy, cancer, syphilis, poisons, and several other diseases, we find at the same time a deficiency of oil and an emaciation take place; which, in my apprehension, must be attributed to the absorption of oil, which the presence of acrimony in the body excites.

It is not unlikely that certain poisons introduced into the body, may subsist there; and, giving occasion to an absorption of oil, may lay a foundation for the *Tabes à veneno*, Sauv. sp. 17.

1617. A fourth case of emaciation, and which I would attribute to a sudden and considerable absorption of oil from the cellular texture, is that of fever, which so generally produces emaciation. This may perhaps be in part attributed to the increased perspiration, and therefore to the general deficiency of fluids that may be supposed to take place: but whatever share that may have in producing the effect, we can, from the evident shrinking and diminution of the cellular substance, wherever it falls under our observation, certainly conclude, that there has been a very considerable absorption of the oil which had been before deposited in that substance. This explanation is rendered the more probable from this, that I suppose the absorption mentioned is necessarily made for the purpose of enveloping or correcting an acrimony, which manifestly does in many, and may be suspected to arise in all cases of fever. The most remarkable instance of emaciation occurring in fevers, is that which appears in the case of hectic fevers. Here the emaciation may be attributed to the profuse sweatings that commonly attend the disease: but there is much reason to believe, that an acrimony also is present in the blood, which, even in the beginning of the disease, prevents the secretion and accumulation of oil; and in the more advanced states of it, must occasion a more considerable absorption of it; which, from the shrinking of the cellular substance, seems to go farther than in almost any other instance.

Upon the subject of emaciations from a deficiency of fluids, it may be observed, that every increased evacuation excites an absorption from other parts, and particularly from the cellular texture; and it is therefore probable, that a deficiency of fluids, from increased evacuations, produces an emaciation, not only by the waste of the fluids in the vascular system, but also by occasioning a considerable absorption from the cellular texture.

1618. I have thus endeavoured to explain the several cases and causes of emaciation; but I could not prosecute the consideration of these here in the order they are set down in the Methodical Nosology. In that work I was engaged chiefly in arranging the species of Sauvages; but it is my opinion now, that the arrangement there given is erroneous, in both combining and separating species improperly: and it seems to me more proper here to take notice of diseases, and put them together according to the affinity of their nature, rather than by that of their external appearances. I doubt, if even the distinction of the Tabes and Atrophia, attempted in the Nosology, will properly apply; as I think there are certain diseases of the same nature, which sometimes appear with, and sometimes without fever.

1619. After having considered the various cases of emaciations, I should perhaps treat of their cure: but it will readily appear, that the greater part of the cases above mentioned are purely symptomatic, and consequently that the cure of them must be that of the primary diseases upon which they depend. Of those cases that can anywise be considered as idiopathic, it will appear that they are to be cured entirely by removing the remote causes; the means of accomplishing which must be sufficiently obvious.

BOOK II.

OF INTUMESCENTIÆ,

OR GENERAL SWELLINGS.

ORD. II. INTUMESCENTIÆ.

Totum vel magna corporis pars extrorsum tumens.

INTRODUCTION.

1620. THE swellings to be treated of in this place, are those which extend over the whole, or a great part of the body; or such at least, as, though of small extent, are however of the same nature with those that are more generally extended.

The swellings comprehended under this artificial order are hardly to be distinguished from one another, otherwise than by the matter they contain or consist of: and, in this view, I have divided the order into four sections, as the swelling happens to contain, 1*st*, Oil; 2*d*, Air; 3*d*, A watery fluid; or, 4*th*, As the increased bulk depends upon the enlargement of the whole substance of certain parts, and particularly of one or more of the abdominal viscera.

CHAP. I.

OF ADIPOSE SWELLINGS.

G. LXX. Polysarcia.—*Corporis pinguedinosa intumescentia molesta.*

1621. The only disease to be mentioned in this chapter, I have, with other nosologists, named *Polysarcia;* and in English it may be named Corpulency, or, more strictly, Obesity; as it is placed here upon the common supposition of its depending chiefly upon the increase of oil in the cellular texture of the body. This corpulency, or obesity, is in very different degrees in different persons, and is often considerable without being considered as a disease. There is, however, a certain degree of it, which will be generally allowed to be a disease; as, for example, when it renders persons, from a difficult respiration, uneasy in themselves, and, from the inability of exercise, unfit for discharging the duties of life to others: and, for that reason, I have given such a disease a place here. Many physicians have considered it as an object of practice, and as giving, even in no very high degree, a disposition to many diseases; I am of opinion, that it should be an object of practice more frequently than it has been, and therefore that it merits our consideration here.

1622. It may perhaps be alleged, that I have not been sufficiently correct, in putting the disease of corpulency as an intumescentia pinguedinosa, and therefore implying its being an increase of the bulk of the body, from an accumulation of oil in the cellular texture only. I am aware of this objection: and, as I have already said that emaciation (1602.) depends either upon a general deficiency of fluids in the vascular system, or upon a deficiency of oil in the cellular texture; so I should perhaps have observed farther, that the corpulency, or general fulness of the body may depend upon the fulness of the vascular system as well as upon that of the cellular texture. This is true; and for the same reasons I ought, perhaps, after Linnæus and Sagar, to have set down plethora as a particular disease, and as an instance of morbid intumescence. I have, however, avoided this, as Sauvages and Vogel have done; because I apprehend that plethora is to be considered as a state of temperament only, which may indeed dispose to disease; but not as a disease in itself, unless, in the language of the Stahlians, it be a plethora commota, when it produces a disease, accompanied with particular symptoms, which give occasion to its being distinguished by a different appellation. Further, it appears to me, that the symptoms which Linnæus, and more particularly those which Sagar employs in the character of plethora, never do occur but when the intumescentia pinguedinosa has a great share in producing them. It is, however, very necessary to observe here, that plethora and obesity are generally combined together; and that in some cases of corpulency it may be difficult to determine which of the causes has the greatest share in producing it. It is indeed very possible, that a plethora may occur without great obesity; but I apprehend, that obesity never happens to a considerable degree, without producing a *plethora ad spatium* in a great part of the system of the aorta, and therefore a *plethora ad molem* in the lungs, and in the vessels of the brain.

1623. In attempting the cure of polysarcia, I am of opinion, that the conjunction of plethora and obesity, in the manner just now mentioned, should be constantly attended to; and when the morbid effects of the plethoric habit are threatened, either in the head or lungs, that blood-letting is to be practised: but, at the same time, it is to be observed, that persons of much obesity do not bear blood-letting well; and when the circumstances I have mentioned do not immediately require it, the practice, upon account of obesity alone, is hardly ever to be employed. The same remark is to be made, with respect to any other evacuations that may be proposed for the cure of corpulency: for, without the other means I am to mention, they can give but a very imperfect relief; and, in so far as they either empty or weaken the system, they may favour the return of plethora, and the increase of obesity.

1624. Polysarcia, or corpulency, whether it depend upon plethora or obesity, whenever it can either be considered as a disease, or threatens to induce one, is to be cured, or the effects of it are to be obviated, by diet and exercise. The diet must be sparing; or rather, what is more admissible, it must be such as affords little nutritious matter. It must therefore be chiefly, or almost only, of vegetable matter, and at the very utmost of milk. Such a diet should be employed, and generally ought to precede exercise: for obesity does not easily admit of bodily exercise; which is, however, the only mode that can be very effectual. Such, indeed, in many cases, may seem difficult to be admitted; but I am of opinion, that even the most corpulent may be brought to bear it, by at first attempting it very moderately, and increasing it by degrees very slowly, but at the same time persisting in such attempts with great constancy.

1625. As these, though the only effectual measures, are often difficult to be admitted or carried into execution, some other means have been thought of and employed for reducing corpulency. These, if I mistake not, have all been certain methods of inducing a saline state in the mass of blood; for such I suppose to be the effects of vinegar and of soap, which have been proposed. The latter, I believe, hardly passes into the blood-vessels, without being resolved and formed into a neutral salt with the acid which it meets with in the stomach. How well acrid and saline substances are fitted to diminish obesity, may appear from what has been said above in 1615. What effects vinegar, soap, or other substances employed have had in reducing corpulency, there have not proper opportunities of observing occurred to me: but I am well persuaded, that the inducing a saline and acrid state of the blood may have worse consequences than the corpulency it was intended to correct; and that no person should hazard these, while he may have recourse to the more safe and certain means of abstinence and exercise.

CHAP. II.

OF FLATULENT SWELLINGS.

G. LXXI. PNEUMATOSIS.—*Corporis intumescentia tensa, elastica. sub manu crepitans.*

Sp. 1. *Pneumatosis (spontanea) sine causa manifesta.*

Sp. 2. *Pneumatosis (traumatica) a vulnere thoracis.*

Sp. 3. *Pneumatosis (venenata) a veneno injecto vel applicato.*

Sp. 4. *Pneumatosis (hysterica) cum hysteria.*

G. LXXII. TYMPANITES.—*Abdominis intumescentia tensa, elastica, sonora; alvus adstricta; caeterarum partium macies.*

Sp. 1. *Tympanites (intestinalis) cum tumore abdominis saepe inaequale, et cum rejectione aëris frequenti, tensionem et dolorem levante.*

Sp. 2. *Tympanites (abdominalis) cum resonitu evidentiore, tumore magis aequabili, et emissione flatuum rariori et minus levante.*

1626. THE cellular texture of the human body very readily admits of air, and allows the same to pass from any one to every other part of it. Hence Emphysemata have often appeared from air collected in the cellular texture under the skin, and in several other parts of the body. The flatulent swellings under the skin have indeed most commonly appeared in consequence of air immediately introduced from without: but in some instances of flatulent swellings, especially those of the internal parts not communicating with the alimentary canal, such an introduction cannot be perceived or supposed; and therefore, in these cases, some other cause of the production and collection of air must be looked for, though it is often not to be clearly ascertained.

In every solid, as well as every fluid substance which makes a part of the human body, there is a considerable quantity of air, in a fixed state, which may be again restored to its elastic state, and separated from those substances, by the power of heat, putrefaction, and perhaps other causes: but which of these may have produced the several instances of pneumatosis and flatulent swellings that have been recorded by authors, I cannot pretend to ascertain. Indeed, upon account of these difficulties, I cannot proceed with any clearness on the general subject of pneumatosis; and, therefore, with regard to flatulent swellings, I find it necessary to confine myself to the consideration of those of the abdominal region alone; which I shall now treat of under the general name of Tympanites.

1627. The tympanites is a swelling of the abdomen; in which the teguments appear to be much stretched by some distending power within, and equally stretched in every posture of the body. The swelling does not readily yield to any pressure; and in so far as it does, very quickly recovers its former state upon the pressure being removed. Being struck, it gives a sound like a drum, or other stretched animal membranes. No fluctuation within is to be perceived; and the whole feels less weighty than might be expected from its bulk. The uneasiness of the distention is commonly relieved by the discharge of air from the alimentary canal, either upwards or downwards.

1628. These are the characters by which the tympanites may be distinguished from the ascites or physconia; and many experiments show, that the tympanites always depend upon a preternatural collection of air, somewhere within the teguments of the abdomen: but the seat of the air is in different cases somewhat different; and this produces the different species of the disease.

One species is, when the air collected is entirely confined within the cavity of the alimentary canal, and chiefly in that of the intestines. This species, therefore, is named the *Tympanites intestinalis*, Sauv. sp. 1. It is, of all others, the most common; and to it especially belong the characters given above.

A second species is, when the air collected is not entirely confined to the cavity of the intestines, but is also present between their coats; and such is that which is named by Sauvages *Tympanites enterophysodes*, Sauv. sp. 3. This has certainly been a rare occurrence; and has probably occurred only in consequence of the *tympanites intestinalis*, by the air escaping from the cavity of the intestines into the interstices of the coats. It is, however, possible, that an erosion of the internal coat of the intestines may give occasion to the air, so constantly present in their cavity, to escape into the interstices of their coats, though in the whole of their cavity there has been no previous accumulation.

A third species is, when the air is collected in the sac of the peritonæum, or what is commonly called the cavity of the abdomen, that is, the space between the peritonæum and viscera; and then the disease is named *Tympanites abdominalis*, Sauv. sp. 2. The existence of such a tympanites, without any *tympanites intestinalis*, has been disputed; and it certainly has been a rare occurrence: but from several dissections, it is unquestionable that such a disease has sometimes truly occurred.

A fourth species of tympanites, is, when the *tympanites intestinalis* and *abdominalis* are joined together, or take place at the same time. With respect to this, it is probable that the *tympanites intestinalis* is the primary disease; and the other only a consequence of the air escaping, by an erosion or rupture of the coats of the intestines, from the cavity of these, into that of the abdomen. It is indeed possible, that in consequence of erosion or rupture, the air which is so constantly present in the intestinal canal may escape from thence in such quantity into the cavity of the abdomen, as to give a *tympanites abdominalis*, whilst there was no previous considerable accumulation of air in the intestinal cavity itself; but I have not facts to ascertain this matter properly.

A fifth species has also been enumerated. It is when a *typanites abdominalis* happens to be joined with the *hydrops ascites;* and such a disease therefore is named by Sauvages *Tympanites asciticus*, Sauv. sp. 4. In most cases of tympanites, indeed, some quantity of serum has, upon dissection, been found in the sac of the peritonæum; but that is not enough to constitute the species now mentioned; and when the collection of serum is more considerable, it is commonly where, both from the causes which have preceded, and likewise from the symptoms which attend, the ascites may be considered as the primary disease; and therefore that this combination does not exhibit a proper species of the tympanites.

1629. As this last is not a proper species, and as some of the others are not only extremely rare, but even, when occurring, are neither primary, nor to be easily distinguished, nor, as considered in themselves, admitting of any cure, I shall here take no further nótice of them; confining myself, in what follows, to the consideration of the most frequent case, and almost the only object of practice, the *tympanites intestinalis.*

1630. With respect to this, I cannot perceive that it arises in any peculiar temperament, or depends upon any predisposition, which can be discerned. It occurs in either sex, at every age, and frequently in young persons.

1631. Various remote causes of it have been assigned: but many of these have not commonly the effect of producing this disease; and although some of them have been truly antecedents of it, I can in few instances discover the manner in which they produce the disease, and therefore cannot certainly ascertain them to have been causes of it.

1632. The phenomena of this disease in its several stages are the following.

The tumour of the belly sometimes grows very quickly to a considerable degree, and seldom in the slow manner the ascites commonly comes on. In some cases, however, the tympanites comes on gradually, and is introduced by an unusual flatulency of the stomach and intestines, with frequent borborygmi, and an uncommonly frequent expulsion of air upwards and downwards. This state is also frequently attended with colic pains, especially felt about the navel, and upon the sides towards the back; but generally as the disease advances, these pains become less considerable. As the disease advances, there is a pretty constant desire to discharge air, but it is accomplished with difficulty; and when obtained, although it give some relief from the sense of distention, this relief is commonly transient and of short duration. While the disease is coming on, some inequality of tumour and tension may be perceived in different parts of the belly; but the distention soon becomes equal over the whole, and exhibits the phenomena mentioned in the character. Upon the first coming on of the disease, as well as during its progress, the belly is bound, and the fæces discharged are commonly hard and dry. The urine, at the beginning, is usually very little changed in quantity or quality from its natural state; but as the disease continues, it is commonly changed in both respects, and at length sometimes a strangury, and even an ischuria, comes on. The disease has seldom advanced far, before the appetite is much impaired, and digestion ill performed: and the whole body, except the belly, becomes considerably emaciated. Together with these symptoms, a thirst and uneasy sense of heat at length come on, and a considerable frequency of pulse occurs, which continues throughout the course of the disease. When the tumour of the belly arises to a considerable bulk, the breathing becomes very difficult, with a frequent dry cough. With all these symptoms the strength of the patient declines; and the febrile symptoms daily increasing, death at length ensues, sometimes probably in consequence of a gangrene coming upon the intestines.

1633. The tympanites is commonly of some duration, and to be reckoned a chronic disease. It is very seldom quickly fatal, except where such an affection suddenly arises in fevers. To this Sauvages has properly given a different appellation, that of *Meteorismus;* and I judge it may always be considered as a symptomatic affection, entirely distinct from the tympanites we are now considering.

1634. The tympanites is generally a fatal disease, seldom admitting of cure; but what may be attempted in this way, I shall try to point out, after I shall have endeavoured to explain the proximate cause, which alone can lay the foundation of what may be rationally attempted towards its cure.

1635. To ascertain the proximate cause of tympanites, is somewhat difficult. It has been supposed in many cases to be merely an uncommon quantity of air present in the alimentary canal, owing to the extrication and detachment of a greater quantity of air than usual from the alimentary matters taking in. Our vegetable aliments, I believe, always undergo some degree of fermentation; and in consequence, a quantity of air is extricated and detached from them in the stomach and intestines: but it appears, that the mixture of the animal fluids which our aliments meet with in the alimentary canal, prevents the same quantity of air from being detached from them that would have been in their fermentation without such mixture, and it is probable that the same mixture contributes also to the reabsorption of the air that had been before in some measure detached. The extrication, therefore, of an unusual quantity of air from the aliments, may, in certain circumstances, be such, perhaps, as to produce a tympanites; so that this disease may depend upon a fault of the digestive fluids, whereby they are unfit to prevent the too copious extrication of air, and unfi also to occasion that reabsorption of air which in sound persons commonly happens. An unusual quantity of air in the alimentary canal, whether owing to the nature of the aliments taken in, or to the fault of the digestive fluid, does certainly sometimes take place; and may possibly have, and in some measure certainly has, a share in producing certain flatulent disorders of the alimentary canal; but cannot be supposed to produce the tympanites, which often occurs when no previous disorder had appeared in the system. Even in those cases of tympanites which are attended at their beginning with flatulent disorders in the whole of the alimentary canal, as we know that a firm tone of the intestines both moderates the extrication of air, and contributes to its reabsorption or ready expulsion, so the flatulent symptoms which happen to appear at the coming on of a tympanites, are, in my opinion, to be referred to a loss of tone in the muscular fibres of the intestines, rather than to any fault in the digestive fluids.

1636. These, and other considerations, lead me to conclude, that the chief part of the proximate cause of tympanites is a loss of tone in the muscular fibres of the intestines. But further, as air of any kind accumulated in the cavity of the intestines should, even by its own elasticity, find its way either upwards or downwards, and should also, by the assistance of inspiration, be entirely thrown out of the body; so, when neither the reabsorption nor the expulsion takes place, and the air is accumulated so as to produce tympanites, it is probable that the passage of the air along the course of the intestines is in some places of these interrupted. This interruption, however, can hardly be supposed to proceed from any other cause than spasmodic constrictions in certain parts of the canal, and I conclude, therefore, that such constrictions concur as part in the proximate cause of tympanites. Whether these spasmodic constrictions are to be attributed to the remote cause of the disease, or may be considered as the consequence of some degree of atony first arising, I cannot with certainty, and do not find it necessary to determine.

1637. Having thus endeavoured to ascertain the proximate cause of tympanites, I proceed to treat of its cure; which indeed has seldom succeeded, and almost never but in a recent disease. I must, however, endeavour to say what may be reasonably attempted; what has commonly been attempted; and what attempts have sometimes succeeded in the cure of this disease.

1638. It must be a first indication to evacuate the air accumulated in the intestines: and for this purpose it is necessary that those constrictions, which had especially occasioned its accumulation, and continue to interrupt its passage along the course of the intestines, should be removed. As these, however, can hardly be removed but by exciting the peristaltic motion in the adjoining portions of the intestines, purgatives have been commonly employed; but it is at the same time agreed, that the more gentle laxatives only ought to be employed, as the more drastic, in the overstretched and tense state of the intestines, are in danger of bringing on inflammation.

It is for this reason, also, that glysters have been frequently employed; and they are the more necessary, as the fæces collected are generally found to be in a hard and dry state. Not only upon account of this state of the fæces, but, farther, when glysters produce a considerable evacuation of air, and thus show that they have some effect in relaxing the spasms of the intestines, they ought to be repeated very frequently.

1639. In order to take off the constrictions of the intestines, and with some view also to the carminative effects of the medicines, various antispasmodics have been proposed, and commonly employed; but their effects are seldom considerable, and it is alleged that their heating and inflammatory powers have sometimes been hurtful. It is, however, always proper to join some of the milder kinds with both the purgatives and glysters that are employed; and it has been very properly advised to give always the chief of antispasmodics, that is, an opiate, after the operation of purgatives is finished.

1640. In consideration of the overstretched, tense, and dry state of the intestines, and especially of the spasmodic constrictions that prevail, fomentations and warm bathing have been proposed as a remedy, and are said to have been employed with advantage : but it has been remarked, that very warm baths have not been found so useful as tepid baths long continued.

1641. Upon the supposition that this disease depends especially upon an atony of the alimentary canal, tonic remedies seem to be properly indicated. Accordingly chalybeates, and various bitters, have been employed ; and, if any tonic, the Peruvian bark might probably be useful.

1642. But as no tonic remedy is more powerful than cold applied to the surface of the body, and cold drink thrown into the stomach ; so such a remedy has been thought of in this disease. Cold drink has been constantly prescribed, and cold bathing has been employed with advantage ; and there have been several instances of the disease being suddenly and entirely cured by the repeated application of snow to the lower belly.

1643. It is hardly necessary to remark, that, in the diet of tympanitic persons, all sorts of food ready to become flatulent in the stomach are to be avoided ; and it is probable, that the fossil acids and neutral salts, as antizymics, may be useful.

1644. In obstinate and desperate cases of tympanites, the operation of the paracentesis has been proposed : but it is a very doubtful remedy, and there is hardly any testimony of its having been practised with success. It must be obvious, that this operation is a remedy suited especially, and almost only, to the *tympanites abdominalis ;* the existence of which, separately from the *intestinalis*, is very doubtful; at least not easily ascertained. Even if its existence could be ascertained, yet it is not very likely to be cured by this remedy : and how far the operation might be safe in the *tympanites intestinalis*, is not yet determined by any proper experience.

CHAP. III.

OF WATERY SWELLINGS, OR DROPSIES.

1645. A PRETERNATURAL collection of serous or watery fluids, is often formed in different parts of the human body; and although the disease thence arising be distinguished according to the different parts which it occupies, yet the whole of such collections come under the general appellation of Dropsies. At the same time, although the particular instances of such collection are to be distinguished from each other according to the parts they occupy, as well as by other circumstances attending them; yet all of them seem to depend upon some general causes, very much in common to the whole. Before proceeding, therefore, to consider the several species, it may be proper to endeavour to assign the general causes of dropsy.

1646. In persons in health, a serous or watery fluid seems to be constantly poured out, or exhaled in vapour, into every cavity and interstice of the human body capable of receiving it; and the same fluid, without remaining long or being accumulated in these spaces, seems constantly to be soon again absorbed from thence by vessels adapted to the purpose. From this view of the animal economy, it will be obvious, that if the quantity poured out into any space happens to be greater than the absorbents can at the same time take up, an unusual accumulation of serous fluid will be made in such parts; or though the quantity poured out be not more than usual, yet if the absorption be anywise interrupted or diminished, from this cause also an unusual collection of fluids may be occasioned.

Thus, in general, dropsy may be imputed to an increased effusion, or to a diminished absorption; and I therefore proceed to inquire into the several causes of these.

1647. An increased effusion may happen, either from a preternatural increase of the ordinary exhalation, or from the rupture of vessels carrying, or of sacs containing serous or watery fluids.

1648. The ordinary exhalation may be increased by various causes, and particularly by an interruption given to the free return of the venous blood from the extreme vessels of the body to the right ventricle of the heart. This interruption seems to operate by resisting the free passage of the blood from the arteries into the veins, thereby increasing the force of the arterial fluids in the exhalants, and consequently the quantity of fluid which they pour out.

1649. The interruption of the free return of the venous blood from the extreme vessels, may be owing to certain circumstances affecting the course of the venous blood; very frequently, to certain conditions in the right ventricle of the heart itself, preventing it from receiving the usual quantity of blood from the vena cava; or to obstructions in the vessels of the lungs preventing the entire evacuation of the right ventricle, and thereby hindering its receiving the usual quantity of blood from the cava. Thus, a polypus in the right ventricle of the heart, and the ossification of its valves, as well as all considerable and permanent obstructions of the lungs, have been found to be causes of dropsy.

1650. It may serve as an illustration of the operation of these general causes, to remark, that the return of the venous blood is in some measure resisted when the posture of the body is such as gives occasion to the gravity of the blood to oppose the motion of it in the veins, which takes effect when the force of the circulation is weak; and from whence it is that an upright posture of the body produces or increases serous swellings in the lower extremities.

1651. Not only those causes interrupting the motion of the venous blood more generally, but, farther, the interruption of it in particular veins, may likewise have the effect of increasing exhalation, and producing dropsy. The most remarkable instance of this is, when considerable obstructions of the liver prevent the blood from flowing freely into it from the vena portarum and its numerous branches; and hence these obstructions are a frequent cause of dropsy.

1652. Scirrhosities of the spleen and other viscera, as well as the scirrhosity of the liver, have been considered as causes of dropsy; but the manner in which they can produce the disease, I do not perceive, except it may be, where they happen to be near some considerable vein, by the compression of which they may occasion some degree of ascites; or, by compressing the vena cava, may produce an anasarca of the lower extremities. It is indeed true, that scirrhosities of the spleen and other viscera have been frequently discovered in the bodies of hydropic persons: but I believe they have been seldom found, unless when scirrhosities of the liver were also present; and I am inclined to think, that the former have been the effects of the latter, rather than the cause of the dropsy: or that, if scirrhosities of the other viscera have appeared in hydropic bodies when that of the liver was not present, they must have been the effects of some of those causes of dropsy to be hereafter mentioned; and consequently to be the accidental attendants, rather than the causes of such dropsies.

1653. Even in smaller portions of the venous system, the interruption of the motion of the blood in particular veins has had the same effect. Thus, a polypus formed in the cavity of a vein, or tumours formed in its coats, preventing the free passage of the blood through it, have had the effect of producing dropsy in parts towards the extremity of such veins.

1654. But the cause most frequently interrupting the motion of the blood through the veins, is the compression of tumours existing near to them; such as aneurisms in the arteries, abscesses, and scirrhous or steatomatous tumours in the adjoining parts.

To this head may be referred, the compression of the descending cava by the bulk of the uterus in pregnant women, and the compression of the same by the bulk of water in the ascites; both of which compressions frequently produce serous swellings in the lower extremities.

1655. It may be supposed, that a general preternatural plethora of the venous system may have the effect of increasing exhalation; and that this plethora may happen from the suppression of fluxes, or evacuations of blood, which had for some time taken place in the body, such as the menstrual and hæmorrhoidal fluxes. A dropsy, however, from such a cause has been at least a rare occurrence; and when it seems to have happened, I should suppose it owing to the same causes as the suppression itself, rather than to the plethora produced by it.

1656. One of the most frequent causes of an increased exhalation, I apprehend to be the laxity of the exhalant vessels. That such a cause may operate, appears probable from this, that paralytic limbs, in which such a laxity is to be suspected, are frequently affected with serous, or, as they are called, œdematous swellings.

But a much more remarkable and frequent example of its operation occurs in the case of a general debility of the system, which is so often attended with dropsy. That a general debility does induce dropsy, appears sufficiently from its being so commonly the consequence of powerfully debilitating causes; such as fevers, either of the continued or intermittent kind, which have lasted long; long continued and somewhat excessive evacuations of any kind; and, in short, almost all diseases that have been of long continuance, and have at the same time induced the other symptoms of a general debility.

Among other causes inducing a general debility of the system, and thereby dropsy, there is one to be mentioned as frequently occurring, and that is, intemperance in the use of intoxicating liquors; from whence it is that drunkards of all kinds, and especially dram-drinkers, are so affected with this disease.

1657. That a general debility may produce a laxity of the exhalants, will be readily allowed: and that by this especially it occasions dropsy, I judge from hence, that while most of the causes already mentioned are suited to produce dropsies of particular parts only, the state of general debility gives rise to an increased exhalation into every cavity and interstice of the body, and therefore brings on a general disease. Thus, we have seen effusions of a serous fluid made, at the same time, into the cavity of the cranium, into that of the thorax and of the abdomen, and likewise into the cellular texture almost over the whole of the body. In such cases, the operation of a general cause discovered itself, by these several dropsies increasing in one part as they diminished in another, and this alternately in the different parts. This combination, therefore, of the different species of dropsy, or rather, as it may be termed, this universal dropsy, must, I think, be referred to a general cause; and in most instances, hardly any other can be thought of, but a general laxity of the exhalants. It is this, therefore, that I call the *hydropic diathesis;* which frequently operates by itself; and frequently, in some measure, concurring with other causes, is especially that which gives them their full effect.

This state of the system, in its first appearance, seems to be what has been considered as a particular disease under the name of *Cachexy;* but in every instance of it that has occurred to me, I have always considered, and have always found it, to be the beginning of general dropsy.

1658. The several causes of dropsy already mentioned may produce the disease, although there be no preternatural abundance of serous or watery fluids in the blood-vessels; but it is now to be remarked, that a preternatural abundance of that kind may often give occasion to the disease, and more especially when such abundance concurs with the causes above enumerated.

One cause of such preternatural abundance may be an unusual quantity of water taken into the body. Thus, an unusual quantity of water taken in by drinking, has sometimes occasioned a dropsy. Large quantities of water, it is true, are upon many occasions taken in; and being as readily thrown out again by stool, urine, or perspiration, have not produced any disease. But it is also certain, that, upon some occasions, an unusual quantity of watery liquors taken in, has run off by the several internal exhalants, and produced a dropsy. This seems to have happened, either from the excretories not being fitted to throw out the fluid so fast as it had been taken in, or from the excretories having been obstructed by accidentally concurring causes. Accordingly, it is said, that the sudden taking in of a large quantity of very cold water, has produced dropsy, probably from the cold producing a constriction of the excretories.

The proportion of watery fluid in the blood may be increased, not only by the taking in a large quantity of water by drinking, as now mentioned, but it is possible that it may be increased also by water taken in from the atmosphere by the skin in an absorbing or imbibing state. It is well known, that the skin may be, at least occasionally, in such a state; and it is probable, that in many cases of beginning dropsy, when the circulation of the blood on the surface of the body is very languid, that the skin may be changed from a perspiring, to an imbibing state; and thus, at least, the disease may be very much increased.

1659. A second cause of a preternatural abundance of watery fluids in the blood-vessels, may be, an interruption of the ordinary watery excretions; and accordingly it is alleged, that persons much exposed to a cold and moist air are liable to dropsy. It is also said, that an interruption, or considerable diminution, of the urinary secretion, has produced the disease: and it is certain, that, in the case of an *ischuria renalis*, the serosity retained in the blood-vessels has been poured out into some internal cavities, and has occasioned dropsy.

1660. A third cause, of an over-proportion of serous fluid in the blood ready to run off by the exhalants, has been very large evacuations of blood, either spontaneous or artificial. These evacuations, by abstracting a large proportion of red globules and gluten, which are the principal means of retaining serum in the red vessels, allow the serum to run off more readily by the exhalants: and hence dropsies have been frequently the consequence of such evacuations.

It is possible also, that large and long-continued issues, by abstracting a large proportion of gluten, may have the same effect.

An over-proportion of the serous parts of the blood may not only be owing to the *spoliation* just now mentioned, but may, I apprehend, be likewise owing to a fault in the digesting and assimilating powers in the stomach and other organs; whereby they do not prepare and convert the aliments taken in, in such a manner as to produce from them the due proportion of red globules and gluten; but, still continuing to supply the watery parts, occasion these to be in an over-proportion, and consequently ready to run off in too large quantity by the exhalants. It is in this manner that we explain the dropsy, so often attending chlorosis; which appears always at first by a pale colour of the whole body, showing a manifest deficiency of red blood; which in that disease can only be attributed to an imperfect digestion and assimilation.

Whether a like imperfection take place in what has been called a *Cachexy*, I dare not determine. This disease indeed has been commonly and very evidently owing to the general causes of debility above mentioned: and it being probable that the general debility may affect the organs of digestion and assimilation; so the imperfect state of these functions, occasioning a deficiency of red globules and gluten, may often concur with the laxity of the exhalants in producing dropsy.

1661. These are the several causes of increased exhalation, which I have mentioned as the chief cause of the effusion preducing dropsy; but I have likewise observed in 1647. that with the same effect, an effusion may also be made by the rupture of vessels carrying watery fluids.

In this way, a rupture of the thoracic duct has given occasion to an effusion of chyle and lymph into the cavity of the thorax; and a rupture of the lacteals has occasioned a like effusion into the cavity of the abdomen; and in either case, a dropsy has been produced.

It is sufficiently probable that a rupture of lymphatics, in consequence of strains, or the violent compression of neighbouring muscles, has occasioned an effusion; which, being diffused in the cellular texture, has produced considerable dropsy.

It belongs to this head of causes, to remark, that there are many instances of a rupture or erosion of the kidneys, ureters, and bladder of urine; whereby the urine has been poured into the cavity of the abdomen, and produced an ascites.

1662. Upon this subject, of the rupture of vessels carrying, or of vesicles containing watery fluids, I must observe, that the dissection of dead bodies has often shown vesicles formed upon the surface of many of the internal parts; and it has been supposed, that the rupture of such vesicles, commonly named *Hydatides*, together with their continuing to pour out a watery fluid, has been frequently the cause of dropsy. I cannot deny the possibility of such a cause, but suspect the matter must be explained in a different manner.

There have been frequently found, in almost every different part of animal bodies, collections of spherical vesicles, containing a watery fluid; and in many cases of supposed dropsy, particularly in those called the preternatural encysted dropsies, the swelling has been entirely owing to a collection of such hydatides. Many conjectures have been formed with regard to the nature and production of these vesicles; but the matter at last seems to be ascertained. It seems to be certain, that each of these vesicles has within it, or annexed to it, a living animal of the worm kind; which seems to have the power of forming a vesicle for the purpose of its own economy, and of filling it with a watery fluid drawn from the neighbouring parts: and this animal has therefore been properly named by late naturalists, the *Tænia hydatigena*. The origin and economy of this animal, or an account of the several parts of the human body which it occupies, I cannot prosecute further here; but it was proper for me, in delivering the causes of dropsy, to say thus much of hydatides: and I must conclude with observing, I am well persuaded, that most of the instances of preternatural encysted dropsies which have appeared in many different parts of the human body, have been truly collections of such hydatides; but how the swellings occasioned by these are to be distinguished from other species of dropsy, or how they are to be treated in practice, I cannot at present determine.

1663. After having mentioned these, I return to consider the other general cause of dropsy, which I have said in 1646. may be an interruption or diminution of the absorption that should take up the exhaled fluids from the several cavities and interstices of the body; the causes of which interruption, however, are not easily ascertained.

1664. It seems probable, that absorption may be diminished, and even cease altogether, from a loss of tone in the absorbent extremities of the lymphatics. I cannot indeed doubt that a certain degree of tone or active power is necessary in these absorbent extremities; and it appears probable, that the same general debility which produces that laxity of the exhalant vessels, wherein I have supposed the hydropic diathesis to consist, will at the same time occasion a loss of tone in the absorbents; and therefore that a laxity of the exhalants will generally be accompanied with a loss of tone in the absorbents; and that this will have a share in the production of dropsy. Indeed it is probable that the diminution of absorption has a considerable share in the matter; as dropsies are often cured by medicines which seem to operate by exciting the action of the absorbents.

1665. It has been supposed, that the absorption performed by the extremities of lymphatics may be interrupted by an obstruction of these vessels, or at least of the conglobate glands through which these vessels pass. This, however, is very doubtful. As the lymphatics have branches frequently communicating with one another, it is not probable that the obstruction of any one, or even several of these, can have any considerable effect in interrupting the absorption of their extremities.

And for the same reason, it is as little probable that the obstruction of conglobate glands can have such an effect: at least it is only an obstruction of the glands of the mesentery, through which so considerable a portion of the lymph passes, that can possibly have the effect of interrupting absorption. But even this we should not readily suppose, there being reason to believe that these glands, even in a considerably tumefied state, are not entirely obstructed: And accordingly I have known several instances of the most part of the mesenteric glands being considerably tumefied, without either interrupting the transmission of fluids to the blood-vessels, or occasioning any dropsy.

An hydropic swelling, indeed, seems often to affect the arm from a tumour of the axillary gland: but it seems to me doubtful, whether the tumour of the arm may not be owing to some compression of the axillary vein, rather than to an obstruction of the lymphatics.

1666. A particular interruption of absorption may be supposed to take place in the brain. As no lymphatic vessels have yet very certainly been discovered in that organ, it may be thought that the absorption, which certainly takes place there, is performed by the extremities of veins, or by vessels that carry the fluid directly into the veins; so that any impediment to the free motion of the blood in the veins of the brain may interrupt the absorption there, and occasion that accumulation of serous fluid which so frequently occurs from a congestion of blood in these veins. But I give all this as a matter of conjecture only.

1667. Having thus explained the general causes of dropsy, I should proceed, in the next place, to mention the several parts of the body in which serous collections take place, and so to mark the different species of dropsy: but I do not think it necessary for me to enter into any minute detail upon this subject. In many cases, these collections are not to be ascertained by any external symptoms, and therefore cannot be the objects of practice; and many of them, though in some measure discernible, do not seem to be curable by our art. I the more especially avoid mentioning very particularly the several species, because that has already been sufficiently done by Dr D. Monro, and other writers, in every body's hands. I must confine myself here to the consideration of those species which are the most frequently occurring, and the most common objects of our practice; which are, the Anasarca, Hydrothorax, and Ascites; and of each of these I shall treat in so many separate sections.

SECT. I. *Of Anasarca.*

G. LXXIV. ANASARCA.—*Corporis totius vel partis ejus intumecentia mollis, inelastica.*

Sp. 1. *Anasarca (serosa) a retento sero ob evacuationes solitas suppressas, vel ab aucto sero ob ingestam aquam nimiam.*

Sp. 2. *Anasarca (oppilata) a compressione venarum.*

Sp. 3. *Anasarca (exanthematicum) post exanthemata, et præcipue post erysipelas, suborta.*

Sp. 4. *Anasarca (anæmia) a tenuitate sanguinis per hæmorrhagiam producta.*

Sp. 5. *Anasarca (debilium) in debilibus a morbis longis, vel ab aliis causis.*

1668. The Anasarca is a swelling upon the surface of the body, at first commonly appearing in particular parts only, but at length frequently appearing over the whole. So far as it extends, it is an uniform swelling over the whole member at first, always soft, and readily receiving the pressure of the finger, which forms a hollow that remains for some little time after the pressure is removed, but at length rises again to its former fulness. This swelling generally appears, first, upon the lower extremities; and there too only in the evening, disappearing again in the morning. It is usually more considerable as the person has been more in an erect posture during the day; but there are many instances of the exercise of walking preventing altogether its otherwise usual coming on. Although this swelling appears at first only upon the feet and about the ankles; ye if the causes producing it continue to act, it gradually extends upwards, occupying the legs, thighs, and trunk of the body and sometimes even the head. Commonly the swelling of th lower extremities diminishes during the night; and in the morning, the swelling of the face is most considerable, which agai generally disappears almost entirely in the course of the day.

1669. The terms of *Anasarca* and *Leucophlegmatia* hav been commonly considered as synonymous; but some author have proposed to consider them as denoting distinct disease The authors who are of this last opinion employ the name *Anasarca* for that disease which begins in the lower extremities, and is from thence gradually extended upwards in the manner I have just now described; while they term *Leucophlegmatia*, that in which the same kind of swelling appears even first very generally over the whole body. They seem to thi also, that the two diseases proceed from different causes; ai that, while the anasarca may arise from the several causes 1648.—1659. the leucophlegmatia proceeds especially fro a deficiency of red blood, as we have mentioned in 1660 *et se* I cannot, however, find any proper foundation for this distinction; for although in dropsies proceeding from the causes mentioned in 1660. *et seq.* the disease appears in some cases mo immediately affecting the whole body; yet that does not establi a difference from the common case of anasarca : for the disease, in all its circumstances, comes at length to be entirely the same ; and in the cases occasioned by a deficiency of red blood, I have frequently observed it to come on exactly in the manner of an anasarca, as above described.

1670. An *anasarca* is evidently a preternatural collection of serous fluid in the cellular texture immediately under the skin. Sometimes pervading the skin itself, it oozes out through the pores of the cuticle ; and sometimes, too gross to pass by these, it raises the cuticle in blisters. Sometimes the skin, not allowing the water to pervade it, is compressed and hardened, and at the same time so much distended, as to give anasarcous tumours an unusual firmness. It is in these last circumstances also that an erythematic inflammation is ready to come upon anasarcous wellings.

1671. An anasarca may immediately arise from any of the everal causes of dropsy which act more generally upon the ystem : and even when other species of dropsy, from particuar circustances, appear first, yet whenever these proceed from ny causes more generally affecting the system, an anasarca soonr or later comes always to be joined with them.

1672. The manner in which this disease commonly first apears, will be readily explained by what I have said in 1650., especting the effects of the posture of the body. Its gradual rogress, and its affecting, after some time, not only the cellular exture under the skin, but probably also much of the same exture in the internal parts, will be understood partly from he communication that is readily made between the several arts of the cellular texture ; but especially from the same geeral causes of the disease producing their effects in every part the body. It appears to me that the water of anasarcous swellgs is more readily communicated to the cavity of the thorax, nd to the lungs, than to the cavity of the abdomen, or to the scera contained in it.

1673. An anasarca is almost always attended with a scarcity of urine; and the urine voided, is, from its scarcity, always of a high colour; and from the same cause, after cooling, readily let fall a copious reddish sediment. This scarcity of urine ma sometimes be owing to an obstruction of the kidneys, but probably is generally occasioned by the watery parts of the bloo running off into the cellular texture, and being thereby prevented from passing in the usual quantity to the kidneys.

The disease is also generally attended with an unusual degre of thirst; a circumstance I would attribute to a like abstractio of fluid from the tongue and fauces, which are extremely sensible to every diminution of the fluids in these parts.

1674. The cure of anasarca is to be attempted upon thr general indications.

1. The removing the remote causes of the disease.

2. The evacuation of the serous fluid already collected in th cellular texture.

3. The restoring the tone of the system, the loss of whi may be considered in many cases as the proximate cause of t disease.

1675. The remote causes are very often such as had not only be applied, but had also been removed, long before the disease ca on. Although, therefore, their effects remain, the causes the selves cannot be the objects of practice; but if the causes s continue to be applied, such as intemperance, indolence, a some others, they must be removed. For the most part, t remote causes are certain diseases previous to the dropsy, wh are to be cured by the remedies particularly adapted to the and cannot be treated of here. The curing of these indeed n be often difficult; but it was proper to lay down the pres indication, in order to show, that when these remote causes c not be removed, the cure of the dropsy must be difficult perhaps impossible. In many cases, therefore, the follow indications will be to little purpose; and particularly, that of the execution of the second will not only give the patient a g deal of fruitless trouble, but commonly also hurry on his f

1676. The second indication for evacuating the collected serum, may be sometimes executed with advantage, and often, at least, with temporary relief. It may be performed in two ways. First, by drawing off the water directly from the dropsical part, by openings made into it for that purpose: Or, secondly, by exciting certain serous excretions; in consequence of which, an absorption may be excited in the dropsical parts, and thereby the serum absorbed and carried in to the blood-vessels, may afterwards be directed to run out, or may spontaneously pass out, by one or other of the common excretions.

1677. In an anasarca, the openings into the dropsical part are commonly to be made in some part of the lower extremities; and will be most properly made by many small punctures reaching the cellular texture. Formerly, considerable incisions were employed for this purpose: but as any wound made in dropsical parts, which, in order to their healing, must necessarily inflame and suppurate, are liable to become gangrenous; so it is found to be much safer to make the openings by small punctures only, which may heal up by the first intention. At the same time, even with respect to these punctures, it is proper to observe, that they should be made at some distance from one another, and that care should be taken to avoid making them in the most depending parts.

1678. The water of anasarcous limbs may sometimes be drawn off by pea-issues, made by caustic a little below the knees: or as the great swelling of the lower extremities is chiefly occasioned by the serous fluid exhaled into the upper parts constantly falling down to the lower; so the issues now mentioned, by evacuating the water from these upper parts, may very much relieve the whole of the disease. Unless, however, the isues be put in before the disease is far advanced, and before the parts have very much lost their tone, the places of the issues re ready to become affected with gangrene.

Some practical writers have advised the employment of setons or the same purpose that I have proposed issues; but I apprehend that setons will be more liable than issues to the accident just now mentioned.

1679. For the purpose of drawing out serum from anasarcou limbs, blisters have been applied to them, and sometimes wit great success; but the blistered parts are ready to have a gangrene come upon them. Blistering is therefore to be employe with great caution; and perhaps only in the circumstances tha I have mentioned above to be fit for the employment of issues

1680. Colewort-leaves applied to the skin, readily occasion watery exsudation from its surface; and applied to the feet an legs affected with anasarca, have sometimes drawn off the wate very copiously, and with great advantage.

Analogous, as I judge, to this, oiled silk-hose put upon th feet and legs, so as to shut out all communication with the external air, have been found sometimes to draw a quantity o water from the pores of the skin, and are said in this way t have relieved anasarcous swellings: but in several trials made I have never found either the application of these hose, or tha of the colewort-leaves, of much service.

1681. The second means proposed in 1676. for drawing o the water from dropsical places, may be the employment o emetics, purgatives, diuretics, or sudorifics.

1682. As spontaneous vomiting has sometimes excited a absorption in hydropic parts, and thereby drawn off the water lodged in them, it is reasonable to suppose, that vomiting excited by art may have the same effect; and accordingly it ha been often practised with advantage. The practice howeve requires that the strong antimonial emetics be employed, an that they be repeated frequently after short intervals.

1683. Patients submit more readily to the use of purgatives than to that of emetics; and indeed they commonly bear th former more easily than the latter. At the same time, ther are no means we can employ to procure a copious evacuation o serous fluids with greater certainty than the operation of purgatives; and it is upon these accounts that purging is the evacu ation which has been most frequently, and perhaps with most success, employed in dropsy. It has been generally found necessary to employ purgatives of the more drastic kind; which are commonly known, and need not be enumerated here. I believe indeed, that the more drastic purgatives are the most effectual for exciting absorption, as their stimulus is most readily communicated to the other parts of the system; but of late, an opinion has prevailed, that some milder purgatives may be employed with advantage. This opinion has prevailed particularly with regard to the crystals vulgarly called the Cream of Tartar, which in large doses, frequently repeated, have sometimes answered the purpose of exciting large evacuations, both by stool and urine, and has thereby cured dropsies. This medicine, however, has frequently failed both in its operation and effects, when the drastic purgatives have been more successful.

Practitioners have long ago observed, that in the employment of purgatives, it is requisite they be repeated after as short intervals as the patient can bear; probably for this reason, that when the purging is not carried to the degree of soon exciting an absorption, the evacuation weakens the system, and thereby increases the afflux of fluids to the hydropic parts.

1684. The kidneys afford a natural outlet for a great part of the watery fluids contained in the blood-vessels; and the increasing the excretion by the kidneys to a considerable degree, is a means as likely as any other of exciting an absorption in dropsical parts. It is upon this account that diuretic medicines have been always properly employed in the cure of dropsy. The various diuretics that may be employed, are enumerated in every treatise of the Materia Medica and of the Practice of Physic, and therefore need not be repeated here. It happens, however, unluckily, that none of them are of very certain operation; neither is it well known why they sometimes succeed, and why they so often fail; nor why one medicine should prove of service when another does not. It has been generally the fault of writers upon the Practice of Physic, that they give us instances of cases in which certain medicines have proved very efficacious, but neglect to tell us in how many other instances the same have failed.

1685. It deserves to be particularly observed here, that there is hardly any diuretic more certainly powerful than a large quantity of common water taken in by drinking. I have indeed observed above, in 1658. that a large quantity of water, or of watery liquors, taken in by drinking, has sometimes proved a cause of dropsy ; and practitioners have been formerly so much afraid, that watery liquors taken in by drinking might run off into dropsical places and increase the disease, that they have generally enjoined the abstaining as much as possible from such liquors. Nay, it has been further asserted, that by avoiding this supply of exhalation, and by a total abstinence from drink, dropsies have been entirely cured. What conclusion is to be drawn from these facts is, however, very doubtful. A dropsy arising from a large quantity of liquids taken into the body, has been a very rare occurrence ; and there are, on the other hand, innumerable instances of very large quantities of water having been taken in and running off again very quickly by stool and urine, without producing any degree of dropsy With respect to the total abstinence from drink, it is a practice of the most difficult execution ; and therefore has been so seldom practised, that we cannot possibly know how far it migh prove effectual. The practice of giving drink very sparingly has indeed been often employed ; but in a hundred instances I have seen it carried to a great length without any manifes advantage ; while, on the contrary, the practice of giving drink very largely has been found not only safe, but very often effectual in curing the disease. The ingenious and learned Dr Millman has, in my opinion, been commendably employed in restoring the practice of giving large quantities of watery liquors fo the cure of dropsy. Not only from the instances he mention from his own practice, and from that of several eminent physicians in other parts of Europe, but also from many instances in the records of physic, of the good effects of drinking large quantities of mineral waters in the cure of dropsy, I can have no doubt of the practice recommended by Dr Millman being very often extremely proper. I apprehend it to be especially adapted to those cases in which the cure is chiefly attempted by diuretics. It is very probable, that these medicines can hardly be carried in any quantity to the kidneys without being accompanied with a large portion of water; and the late frequent employment of the crystals of tartar has often shown, that the diuretic effects of that medicine are almost only remarkable when accompanied with a large quantity of water; and that without this, the diuretic effects of the medicine seldom appear. I shall conclude this subject with observing, that as there are so many cases of dropsy absolutely incurable, the practice now under consideration may often fail, yet in most cases it may be safely tried; and if it appear that the water taken in passes readily by the urinary secretion, and especially that it increases the urine beyond the quantity of drink taken in, the practice may probably be continued with great advantage: but, on the contrary, if the urine be not increased, or be not even in proportion to the drink taken in, it may be concluded, that the water thrown in runs off by the exhalants, and will augment the disease.

1686. Another set of remedies which may be employed for exciting a serous excretion, and thereby curing dropsy, is that of sudorifics. Such remedies indeed have been sometimes employed: but however useful they may have been thought, there are few accounts of their having effected a cure; and although I have had some examples of their success, in most instances of their trial they have been ineffectual.

Upon this subject it is proper to take notice of the several means that have been proposed and employed for dissipating the humidity of the body; and particularly that of heat externally applied to th surface of it. Of such applications I have had no experience; and their propriety and utility must rest upon the credit of the authors who relate them. I shall offer only this conjecture upon the subject: That if such measures have been truly useful, as it has seldom been by the drawing out of any sensible humidity, it has probably been by their restoring the perspiration, which is so often greatly diminished in this disease; or perhaps by changing the state of the skin, from the imbibing condition which is alleged to take place, into that of perspiring.

1687. When, by the several means now mentioned, we shall have succeeded in evacuating the water of dropsies, there will then especially be occasion for our third indication; which is, to restore the tone of the system, the loss of which is so often the cause of the disease. This indication, indeed, may properly have place from the very first appearance of the disease; and certain measures adapted to this purpose may, upon such first appearance, be employed with advantage. In many cases of a moderate disease, I am persuaded that they may obviate any future increase of it.

1688. Thus, upon what is commonly the first symptom of anasarca, that is, upon the appearance of what are called Oedematous Swellings of the feet and legs, the three remedies of bandaging, friction, and exercise, have often been used with advantage.

1689. That some degree of external compression is suited to support the tone of the vessels, and particularly to prevent the effects of the weight of the blood in dilating those of the lower extremities, must be sufficiently evident; and the giving that compression by a bandage properly applied, has been often useful. In applying such a bandage, care is to be taken that the compression may never be greater on the upper than on the lower part of the limb; and this, I think, can hardly ever be so certainly avoided, as by employing a properly constructed laced stocking.

1690. Friction is another means by which the action of the blood-vessels may be promoted, and thereby the stagnation of fluids in their extremities prevented. Accordingly, the use of the flesh-brush has often contributed to discuss œdematous swellings. It appears to me, that friction, for the purposes now mentioned, is more properly employed in the morning, when the swelling is very much gone off, than in the evening, when any considerable degree of it has already come on. I apprehend also, that friction being made from below upwards only, is more useful than when made alternately upwards and downwards. It has been common, instead of employing the flesh-brush, to make the friction by warm and dry flannels: and this may in some cases be the most convenient: but I cannot perceive that the impregnation of these flannels with certain dry fumes is of any benefit.

1691. With respect to exercise, I must observe, that although persons being much in an erect posture during the day, may seem to increase the swelling which comes on at night; yet as the action of the muscles has a great share in promoting the motion of the venous blood, so I am certain, that as much exercise in walking as the patient can easily bear, will often prevent that œdematous swelling which much standing, and even sitting, would have brought on.

1692. These measures, however, although they may be useful at the coming on of a dropsy, whose causes are not very powerful, will be often insufficient in a more violent disease; and such therefore will require more powerful remedies. These are exercise and tonic medicines; which may be employed both during the course of the disease, and especially after the water has been evacuated.

1693. Exercise is suited to assist in every function of the animal economy, particularly to promote perspiration, and thereby prevent the accumulation of watery fluids in the body. I apprehend also, that it may be the most effectual means for preventing the skin from being in an imbibing state; and, as has been hinted above on the subject of Emaciation (1607), I am persuaded, that a full and large perspiration will always be a means of exciting absorption in every part of the system. Exercise, therefore, promises to be highly useful in dropsy; and any mode of it may be employed that the patient can most conveniently admit of. It should, however, always be as much as he can easily bear: and in anasarca, the share which the exercise of muscles has in promoting the motion of the venous blood, induces me to think that bodily exercise, to whatever degree the patient can bear it, will always be the most useful. From some experience also, I am persuaded, that by exercise alone, employed early in the disease, many dropsies may be cured.

1694. Besides exercise, various tonic remedies are properly employed to restore the tone of the system. The chief of these are, chalybeates, the Peruvian bark, and various bitters. These are not only suited to restore the tone of the system in general, but are particularly useful in strengthening the organs of digestion, which in dropsies are frequently very much weakened: and for the same purpose also aromatics may be frequently joined with the tonics.

1695. Cold bathing is upon many occasions the most powerful tonic we can employ; but at the beginning of dropsy, when the debility of the system is considerable, it can hardly be attempted with safety. After, however, the water of dropsies has been very fully evacuated, and the indication is to strengthen the system for preventing a relapse, cold bathing may perhaps have a place. It is, at the same time, to be admitted with caution; and can scarcely be employed till the system has otherwise recovered a good deal of vigour. When that indeed has happened, cold bathing may be very useful in confirming and completing it.

1696. In persons recovering from dropsy, while the several means now mentioned for strengthening the system are employed, it will be proper at the same time to keep constantly in view the support of the watery excretions, and consequently the keeping up the perspiration by a great deal of exercise, and continuing the full flow of the urinary excretion by the frequent use of diuretics.

SECT. II.—*Of the Hydrothorax, or Dropsy of the Breast.*

G. LXXVII. HYDROTHORAX.—*Dyspnœa; faciei pallor; pedum œdemata; urina parca; decubitus difficilis; subita et spontanea ex somno cum palpitatione excitatio; aqua in pectore fluctuans.*

1697. The preternatural collection of serous fluid in the thorax, to which we give the appellation of *Hydrothorax*, occurs more frequently than has been imagined. Its presence, however, is not always to be very certainly known; and it often takes place to a considerable degree before it be discovered.

1698. These collections of watery fluids in the thorax, are found in different situations. Very often the water is found at the same time in both sacs of the pleura, but frequently in one of them only. Sometimes it is found in the pericardium alone; but for the most part it only appears there when at the same time a collection is present in one or both cavities of the thorax. In some instances, the collection is found to be only in that cellular texture of the lungs which surrounds the bronchiæ, without there being at the same time any effusion into the cavity of the thorax.

1699. Pretty frequently the water collected consists chiefly of a great number of hydatides in different situations; sometimes seemingly floating in the cavity, but frequently connected with and attached to the particular parts of the internal surface of the pleura.

1700. From the collection of water being thus in various situations and circumstances, symptoms arise which are different in different cases; and from thence it becomes often difficult to ascertain the presence and nature of the affection. I shall, however, endeavour here to point out the most common symptoms, and especially those of that principal and most frequent form of the disease, when the serous fluid is present in both sacs of the pleura, or, as we usually speak, in both cavities of the thorax.

1701. The disease frequently comes on with a sense of anxiety about the lower part of the sternum. This, before it has subsisted long, comes to be joined with some difficulty of breathing; which at first appears only upon the person's moving a little faster than usual, upon his walking up an acclivity, or upon his ascending a staircase: but after some time, this difficulty of breathing becomes more constant and considerable, especially during the night, when the body is in a horizontal situation. Commonly, at the same time, lying upon one side is more easy than upon the other, or perhaps lying upon the back more easy than upon either side. These circumstances are usually attended with a frequent cough, that is at first dry, but which, after some time, is accompanied with an expectoration of thin mucus.

With all these symptoms, the hydrothorax is not certainly discovered, as the same symptoms often attend other diseases of the breast. When, however, along with these symptoms, there is at the same time an œdematous swelling of the feet and legs, a leucophlegmatic paleness of the face, and a scarcity of urine, the existence of a hydrothorax can be no longer doubtful. Some writers have told us, that sometimes in this disease, before the swelling of the feet comes on, a watery swelling of the scrotum appears; but I have never met with any instance of this.

1702. Whilst the presence of the disease is somewhat uncertain, there is a symptom which sometimes takes place, and has been thought to be a certain characteristic of it; and that is, when, soon after the patient has fallen asleep, he is suddenly awaked with a sense of anxiety and difficult breathing, and with a violent palpitation of the heart. These feelings immediately require an erect posture; and very often the difficulty of breathing continues to require and to prevent sleep for a great part of the night. This symptom I have frequently found attending the disease; but I have also met with several instances in which this symptom did not appear. I must remark further, that I have not found this symptom attending the empyema, or any other disease of the thorax; and therefore, when it attends a difficulty of breathing, accompanied with any the smallest symptom of dropsy, I have had no doubt in concluding the presence of water in the chest, and have always had my judgment confirmed by the symptoms which afterwards appeared.

1702. The hydrothorax often occurs with very few, or almost none, of the symptoms above mentioned; and is not, therefore, very certainly discovered till some others appear. The most decisive symptom is a fluctuation of water in the chest, perceived by the patient himself, or by the physician, upon certain motions of the body. How far the method proposed by Auenbrugger will apply to ascertain the presence of water and the quantity of it in the chest, I have not had occasion or opportunity to observe.

It has been said, that in this disease some tumour appears upon the sides or upon the back; but I have not met with any instance of this. In one instance of the disease, I found one side of the thorax considerably enlarged, the ribs standing out farther on that side than upon the other.

A numbness and a degree of palsy in one or both arms, has been frequently observed to attend a hydrothorax.

Soon after this disease has made some progress, the pulse commonly becomes irregular, and frequently intermitting: but this happens in so many other diseases of the breast, that unless when it is attended with some other of the above-mentioned symptoms, it cannot be considered as denoting the hydrothorax.

1703. This disease, as other dropsies, is commonly attended with thirst and a scarcity of urine, to be explained in the same manner as in the case of anasarca (1673.) The hydrothorax, however, is sometimes without thirst, or any other febrile symptom; although I believe this happens in the case of partial affections only, or when a more general affection is yet but in a slight degree. In both cases, however, and more especially when the disease is considerably advanced, some degree of fever is generally present: and I apprehend it to be in such case, that the persons affected are more than usually sensible to cold, and complain of the coldness of the air when that is not perceived by other persons.

1704. The hydrothorax sometimes appears alone, without any other species of dropsy being present at the same time: and in this case the disease, for the most part, is a partial affection, as being either of one side of the thorax only, or being a collection of hydatides in one part of the chest. The hydrothorax, however, is very often a part of more universal dropsy, and when at the same time there is water in all the three principal cavities, and in the cellular texture of a great part of the body, I have met with several instances, in which such universal dropsy began first by an effusion into the thorax. The hydrothorax, however, more frequently comes on from an anasarca gradually increasing; and, as I have said above, the general diathesis seems often to affect the thorax sooner than it does either the head or the abdomen.

1705. This disease seldom admits of a cure, or even of alleviation, from remedies. It commonly proceeds to give more and more difficulty of breathing, till the action of the lungs be entirely interrupted by the quantity of water effused; and the fatal event frequently happens more suddenly than was expected. In many of the instances of a fatal hydrothorax, I have remarked a spitting of blood to come on several days before the patient died.

1706. The cause of hydrothorax is often manifestly one or other of the general causes of dropsy pointed out above: but what it is that determines these general causes to act more especially in the thorax, and particularly what it is that produces the partial collections that occur there, I do not find to be easily ascertained.

1707. From what has been said above, it will be evident, that the cure of hydrothorax must be very much the same with that of anasarca; and when the former is joined with the latter as an effect of the same general diathesis, there can be no doubt of the method of cure being the same in both. Even when the hydrothorax is alone, and the disease partial, from particular causes acting in the thorax only, there can hardly be any other measures employed, than the general ones proposed above. There is only one particular measure adapted to the hydrothorax; and that is, the drawing off the accumulated waters by a paracentesis of the thorax.

1708. To what cases this operation may be most properly adapted, I find it difficult to determine. That it may be executed with safety, there is no doubt; and that it has been sometimes practised with success, seems to be very well vouched. When the disease depends upon a general hydropic diathesis, it cannot alone prove a cure, but may give a temporary relief; and when other remedies seem to be employed with advantage, the drawing off the water may very much favour a complete cure. I have not, however, been so fortunate as to see it practised with any success; and even where it was most promising, that is, in cases of partial affection, my expectations have been disappointed from it.

SECT. III.—*Of Ascites, or Dropsy of the Lower Belly.*

G. LXXVIII. ASCITES.—*Abdominis intumescentia tensa, vix elastica, sed fluctuosa.*

Sp. 1. *Ascites (abdominalis) cum tumore totius abdominis æquali, et cum fluctuatione satis evidente.*

Sp. 2. *Ascites (saccatus) cum tumore abdominis, saltem initio, partiali et cum fluctuatione minus evidente.*

1709. The name of *Ascites* is given to every collection of waters causing a general swelling and distension of the lower belly; and such collections are more frequent than those which happen in the thorax.

1710. The collections in the lower belly, like those of the thorax, are found in different situations. Most commonly they are in the sac of the peritonæum, or general cavity of the abdomen: but they often begin by sacs formed upon, and connected with, one or other of the viscera; and perhaps the most frequent instances of this kind occur in the ovaria of females. Sometimes the water of ascites is found entirely without the peritonæum, and between this and the abdominal muscles.

1711. These collections connected with particular viscera and those formed without the peritonæum, form that disease which authors have termed the *encysted dropsy* or *hydrops saccatus*. Their precise seat, and even their existence, is very often difficult to be ascertained. They are generally formed b collections of hydatides.

1712. In the most ordinary case, that of abdominal dropsy the swelling at first is in some measure over the whole belly but generally appears most considerable in the epigastrium. A the disease, however, advances, the swelling becomes more uni form over the whole. The distension, and sense of weight though considerable, vary a little according as the posture o the body is changed; the weight being felt the most upon the side on which the patient lies, while at the same time on the opposite side the distension becomes somewhat less. In almost all the instances of ascites, the fluctuation of the water within may be perceived by the practitioner's feeling, and sometimes by his hearing. This perception of fluctuation does not certainly distinguish the different states of dropsy; but serves very well to distinguish dropsy from tympanites, from cases of physconia, and from the state of pregnancy in women.

1713. An ascites frequently occurs when no other species of dropsy does at the same time appear; but sometimes the ascites is a part only of universal dropsy. In this case, it usually comes on in consequence of an anasarca, gradually increasing; but its being joined with anasarca does not always denote any general diathesis, as for the most part an ascites sooner or later occasions œdematous swellings of the lower extremities. When he collection of water in the abdomen, from whatever cause, becomes considerable, it is always attended with difficulty of breathing: but this symptom occurs often when, at the same ime, there is no water in the thorax. The ascites is sometimes unaccompanied with any fever; but frequently there is more or less of fever present with it. The disease is never considerable, without being attended with thirst and a scarcity of urine.

1714. In the diagnosis of ascites, the greatest difficulty that occurs, is in discerning when the water is in the cavity of the bdomen, or when it is in the different states of encysted dropsy bove mentioned. There is, perhaps, no certain means of ascertaining this in all cases; but in many we may attempt to orm some judgment with regard to it.

When the antecedent circumstances give suspicion of a general hydropic diathesis; when at the same time some degree f dropsy appears in other parts of the body; and when, from its first appearance, the swelling has been equally over the whole belly, we may generally presume that the water is in the cavity of the abdomen. But when an ascites has not been preceded by any remarkably cachectic state of the system, and when at its beginning the tumour and tension had appeared in one part of the belly more than another, there is reason to suspect an encysted dropsy. Even when the tension and tumou of the belly have become general and uniform over the whole: yet if the system of the body in general appear to be little affected; if the patient's strength be little impaired; if the appetite continue pretty entire, and the natural sleep be little interrupted; if the menses in females continue to flow as usual; i there be yet no anasarca; or, though it may have already take place, if it be still confined to the lower extremities, and there be no leucophlegmatic paleness or sallow colour in the countenance; if there be no fever, nor so much thirst, or scarcity o urine, as occur in a more general affection; then, according a more of these different circumstances take place, there will b the stronger ground for supposing the ascites to be of the encysted kind.

The chief exception to be made from this as a general rule will, in my opinion, be when the ascites may, with much probability, be presumed to have come on in consequence of scirrhous liver; which, I apprehend, may occasion a collectio of water in the cavity of the abdomen, while the general sy tem of the body may not be otherwise much affected.

1715. With respect to the cure of ascites when of the e cysted kind, it does not, so far as I know, admit of any. When th collection of water is in the abdominal cavity alone, without a other species of dropsy present at the same time, I appreher the ascites will always be of difficult cure: for it may be pr sumed to depend upon a scirrhosity of the liver, or oth considerable affection of the abdominal viscera, which I co ceive to be of very difficult cure, and therefore the ascites d pending upon them. At the same time, such cases may oft admit of a temporary relief by the paracentesis.

1716. When the ascites is a part of universal dropsy, it may, as far as other cases of that kind can, admit of a cure; and it will be obvious, that such a cure must be obtained by the same means as above proposed for the cure of general anasarca.

It frequently happens, that the ascites is attended with a diarrhœa; and, in that case, does not admit of the use of purgatives so freely as cases of anasarca commonly do. It is therefore often to be treated by diuretics almost alone.

The diuretics that may be employed are chiefly those above mentioned; but in ascites, a peculiar one has been found out. It is a long continued gentle friction of the skin over the whole of the abdomen, by the fingers dipped in oil. This has sometimes been useful in exciting an increased flow of urine; but in most of the trials of it which I have known made, it has failed in producing that effect.

1717. The ascites admits of a particular means for immediately drawing off the collected waters; and that is the well-known operation of the paracentesis of the abdomen. In what circumstances of ascites this operation can most properly be proposed, it is difficult to determine; but, so far as I can judge, it must be regulated by very much the same considerations as those above mentioned with regard to the paracentesis of the thorax.

The manner of performing the paracentesis of the abdomen, and the precautions to be taken with respect to it, are now so commonly known, and delivered in so many books, that it is altogether unnecessarry for me to offer any directions upon that subject here; especially after the full and judicious information and directions given by Mr Bell, in the second volume of his *System of Surgery*.

CHAP. IV.

OF GENERAL SWELLINGS, ARISING FROM AN INCREASED BULK OF THE WHOLE SUBSTANCE OF PARTICULAR PARTS.

G. LXXXI. PHYSCONIA.—*Tumor quandam abdominis partem potissimum occupans, paulatim crescens, nec sonora, nec fluctuans.*

1718. UPON the subjects of this chapter, several nosological difficulties occur, and particularly with respect to admitting the *Physconia* into the order of General Swellings. At present, however, it is not necessary for me to discuss this point, as I am here to omit entirely the consideration of Physconia; both because it can seldom admit of any successful practice, and because I cannot deliver any thing useful either with regard to the pathology or practice in such a disease.

1719. The only other genus of disease comprehended under the title of the present chapter, is the Rachitis; and this as being both a proper example of the class of *Cachexy*, and of the order of *Intumescentiæ* or General Swellings, I shall offer some observations with regard to it.

Of Rachitis, or Rickets.

G. LXXXII. RACHITIS.—*Caput magnum anterius maxime tumens; genicula tumida; costæ depressæ; abdomen tumidum; cætera marcescentia.*

1720. This disease has been supposed to have appeared only in modern times, and not above two hundred years ago. This opinion, notwithstanding it has been maintained by persons of the most respectable authority, appears to me, from many considerations, improbable; but it is a point of too little consequence to detain my readers here. The only application of it which deserves any notice is, that it has led to a notion of the disease having arisen from the lues venerea, which had certainly made its first appearance in Europe not very long before the date commonly assigned for the appearance of rachitis: but I shall hereafter show, that the supposed connection between the Syphilis and Rachitis is without foundation.

1721. In delivering the history of the *Rickets*, I must, in the first place, observe, that with respect to the antecedents of the disease, every thing to be found in authors upon this subject appears to me to rest upon a very uncertain foundation. In particular, with respect to the state of the parents whose offspring become affected with this disease, I have met with many instances of it in children from seemingly healthy parents; and have met likewise with many instances of children who never became affected with it, although born of parents who, according to the common accounts, should have produced a rickety offspring; so that, even making allowance for the uncertainty of fathers, I do not find the general opinion of authors upon this subject to be properly supported.

1722. The disease, however, may be justly considered as proceeding from parents; for it often appears in a great number of the same family: and my observation leads me to judge, that it originates more frequently from mothers than from fathers. So far as I can refer the disease of the children to the state of the parents, it has appeared to me most commonly to arise from some weakness, and pretty frequently from a scrofulous habit in the mother. To conclude the subject, I must remark, that in many cases I have not been able to discern the condition of the parents, to which I could refer it.

When nurses, other than the mothers, have been employed to suckle children, it has been supposed that such nurses have frequently given occasion to the disease; and when nurses have both produced and have suckled children who became rickety, there may be ground to suspect their having occasioned the disease in the children of other persons: but I have had few opportunities of ascertaining this matter. It has in some measure appeared to me, that those nurses are most likely to produce this disease, who give infants a large quantity of very watery milk, and who continue to suckle them longer than the usual time. Upon the whole, however, I am of opinion, that hired nurses seldom occasion this disease, unless when a predisposition to it has proceeded from the parents.

1723. With regard to the other antecedents, which have been usually enumerated by authors as the remote causes of this disease, I judge the accounts given to be extremely fallacious; and I am very much persuaded, that the circumstances in the rearing of children have less effect in producing rickets than has been imagined. It is indeed not unlikely, that some of these circumstances mentioned as remote causes may favour, while other circumstances may resist the coming on of the disease; but, at the same time, I doubt if any of the former would produce it where there was no predisposition in the child's original constitution. This opinion of the remote causes, I have formed from observing, that the disease comes on when none of these had been applied; and more frequently that many of them had been applied without occasioning the disease. Thus the learned ZEVIANI alleges, that the disease is produced by an acid from the milk with which a child is fed for the first nine months of its life: but almost all children are fed with the same food, and in which also an acid is always produced; while, at the same time, not one in a thousand of the infants so fed becomes affected with the rickets. If, therefore, in the infants who become affected with this disease, a peculiarly noxious acid is produced, we must seek for some peculiar cause of its production, either in the quality of the milk, or in the constitution of the hild; neither of which, however, Mr Zeviani has explained. cannot indeed believe that the ordinary acid of milk has any hare in producing this disease, because I have known many intances of the acid being produced and occasioning various disrders, without however its ever producing rickets.

Another of the remote causes commonly assigned, is the hild's being fed with unfermented farinaceous food. But over he whole world children are fed with such farinacea, while the isease of rickets is a rare occurrence; and I have known many nstances where children have been fed with a greater than usual roportion of fermented farinacea, and also a greater proportion f animal food, without these preventing the disease. In my pprehension, the like observations might be made with respect o most of the circumstances that have been mentioned as the emote causes of rickets.

1724. Having thus offered my opinion concerning the suposed antecedents of this disease, I proceed now to mention the henomena occurring after it has actually come on.

The disease seldom appears before the ninth month, and selom begins after the second year of a child's age. In the inerval between these periods, the appearance of the disease is ometimes sooner, sometimes later; and commonly at first the isease comes on slowly. The first appearances are a flaccidity f the flesh, the body at the same time becoming leaner, though ood be taken in pretty largely. The head appears large with espect to the body; with the fontanelle, and perhaps the suures, more open than usual in children of the same age. The ead continues to grow larger, in particular the forehead beoming unusually prominent; and at the same time the neck ontinues slender, or seems to be more so, in proportion to the ead. The dentition is slow, or much later than usual; and ose teeth which come out, readily become black, and frequent- again fall out. The ribs lose their convexity, and become attened on the sides; while the sternum is pushed outward, nd forms a sort of ridge. At the same time, or perhaps sooner, the epiphyses at the several joints of the limbs become swelled; while the limbs between the joints appear, or perhaps actually become more slender. The bones seem to be every where flexible, becoming variously distorted; and particularly the spine of the back becoming incurvated in different parts of its length. If the child, at the time the disease comes on, had acquired the power of walking, it becomes daily more feeble in its motions, and more averse to the exertion of them, losing at length the power of walking altogether. Whilst these symptoms go on increasing, the abdomen is always full, and preternaturally tumid. The appetite is often good, but the stools are generally frequent and loose. Sometimes the faculties of the mind are impaired, and stupidity or fatuity prevails; but commonly a premature sensibility appears, and they acquire the faculty of speech sooner than usual. At the first coming on o the disease, there is generally no fever attending it; but it seldom continues long, till a frequent pulse, and other febril symptoms, come to be constantly present. With these symptoms the disease proceeds, and continues in some instances fo some years; but very often, in the course of that time, the disease ceases to advance, and the health is entirely established except that the distorted limbs produced during the disease continue for the rest of life. In other cases, however, the diseas proceeds increasing till it has affected almost every function o the animal economy, and at length terminates in death. Th variety of symptoms which in such cases appear, it does no seem necessary to enumerate, as they are not essential to th constitution of the disease, but are merely consequences of th more violent conditions of it. In the bodies of those who hav died, various morbid affections have been discovered in the internal parts. Most of the viscera of the abdomen have bee found to be preternaturally enlarged. The lungs have also bee found in a morbid state, seemingly from some inflammation th had come on towards the end of the disease. The brain ha been commonly found in a flaccid state, with effusions of a se rous fluid into its cavities. Very universally the bones have been found very soft, and so much softened as to be readily cut by a knife. The fluids have been always found in a dissolved state, and the muscular parts very soft and tender; and the whole of the dead body without any degree of that rigidity which is so common in almost all others.

1725. From these circumstances of the disease, it seems to consist in a deficiency of that matter which should form the solid parts of the body. This especially appears in the faulty state of ossification, seemingly depending upon the deficiency of that matter which should be deposited in the membranes which are destined to become bony, and should give them their due firmness and bony hardness. It appears that this matter is not supplied in due quantity; but that, in place of it, a matter fitted to increase their bulk, particularly in the epiphyses, is applied too largely. What this deficiency of matter depends upon, is difficult to be ascertained. It may be a fault in the organs of digestion and assimilation, which prevents the fluids in general from being properly prepared; or it may be a fault in the organs of nutrition, which prevents the secretion of a proper matter to be applied. With respect to the latter, in what it may consist, I am entirely ignorant, and cannot even discern that such a condition exists: but the former cause, both in its nature and existence, is more readily perceived; and it is probable that it has a considerable influence in the matter as in rachitic persons a thinner state of the blood, both during life and after death, so commonly appears. It is this state of the fluids, or a deficiency of bony matter in them, that I consider as the proximate cause of the disease; and which again may in some measure depend upon a general laxity and debility of the moving fibres of the organs that perform the functions of digestion and assimilation.

1726. There is however something still wanting to explain why these circumstances discover themselves at a particular time of life, and hardly ever either before or after a certain period; and as to this I would offer the following conjectures: Nature having intended that human life should proceed in a certain manner, and that certain functions should be exercised at a certain period of life only; so it has generally provided, that at that period, and not sooner, the body should be fitted for the exercise of the functions suited to it. To apply this to our present subject, Nature seems to have intended that children should walk only at twelve months old; and accordingly has provided, that against that age, and no sooner, a matter should be prepared fit to give that firmness to the bones which is necessary to prevent their bending too easily under the weight of the body. Nature, however, is not always steady and exact in executing her own purposes; and if therefore the preparation of bony matter shall not have been made against the time there is particular occasion for it, the disease of rickets, that is, of soft and flexible bones, must come on; and will discover itself about the particular period we have mentioned. Further, it will be equally probable, that if at the period mentioned the bones shall have acquired their due firmness, and that nature goes on in preparing and supplying the proper bony matter, it may be presumed, that against the time a child is two years old, such a quantity of bony matter will be applied, as to prevent the bones from becoming again soft and flexible, during the rest of life; unless it happen, as indeed it sometimes does, that certain causes occur to wash out again the bony matter from the membranes in which it had been deposited. The account I have now given of the period at which the rickets occur, seems to confirm the opinion of its proximate cause being a deficiency of bony matter in the fluids of the body.

1727. It has been frequently supposed, that a syphilitic taint has a share in producing rickets; but such a supposition is altogether improbable. If our opinion of the rickets having existed in Europe before the syphilis was brought into it, be well founded, it will then be certain that the disease may be occasioned without any syphilitic acrimony having a share in its production. But further, when a syphilitic acrimony is transmitted from the parent to the offspring, the symptoms do not appear at a particular time of life only, and commonly more early than the period of rickets; the symptoms also are very different from those of rickets, and unaccompanied with any appearance of the latter; and, lastly, the symptoms of syphilis are cured by means which, in the case of rickets, have either no effect or a bad one. It may indeed possibly happen, that syphilis and rickets may appear in the same person; but it is to be considered as an accidental complication: and the very few instances of it that have occurred, are by no means sufficient to establish any necessary connection between the two diseases.

1728. With respect to the deficiency of bony matter, which I consider as the proximate cause of rickets, some further conjectures might be offered concerning its remote causes: but none of them appear to me very satisfying; and whatever they might be, it appears to me they must again be resolved into the supposition of a general laxity and debility of the system.

1729. It is upon this supposition almost alone that the cure of rickets has entirely proceeded. The remedies have been such especially as were suited to improve the tone of the system in general, or of the stomach in particular: and we know that the latter are not only suited to improve the tone of the stomach itself, but by that means to improve also the tone of the whole system.

1730. Of tonic remedies, one of the most promising seems to have been cold bathing; and I have found it the most powerful in preventing the disease. For a long time past, it has been the practice in this country, with people of all ranks, to wash their children from the time of their birth with cold water; and from the time that children are a month old, it has been the practice with people of better rank to have them dipped entirely in cold water every morning: and wherever this practice has been pursued, I have not met with any instance of rickets. Amongst our common people, although they wash their children with cold water only, yet they do not so commonly practise immersion: and when amongst these I meet with instances of rickets, I prescribe cold bathing; which accordingly has often checked the progress of the disease, and sometimes seems to have cured it entirely.

1731. The remedy of *Ens Veneris*, recommended by Mr Boyle, and since his time very universally employed, is to be considered as entirely a tonic remedy. That or some other preparation of iron I have almost constantly employed, though not indeed always with success. I have been persuaded, that the ens veneris of Mr Boyle, notwithstanding his giving it this appellation, was truly a preparation of iron, and no other than what we now name the *Flores Martiales*: but it appears, that both Benevoli and Buchner have employed a preparation of copper; and I am ready to believe it to be a more powerful tonic than the preparations of iron.

1732. Upon the supposition of tonic remedies being proper in this disease, I have endeavoured to employ the Peruvian bark: but from the difficulty of administering it to infants in any useful quantity, I have not been able to discover its efficacy; but I am very ready to believe the testimony of De Haen upon this subject.

1733. Exercise, which is one of the most powerful tonics, has been properly recommended for the cure of rickets; and as the exercise of gestation only can be employed, it should always be with the child laid in a horizontal situation, as the carrying them, or moving them in any degree of an erect posture, is very apt to occasion some distortion. It is extremely probable, that, in this disease, friction with dry flannels may be found an useful remedy.

1734. It is also sufficiently probable, that the avoiding of moisture is not only advisable, but may likewise be of service in the cure of this disease.

There is no doubt that a certain diet may contribute to the same end; but what may be the most eligible, I dare not determine. I have no doubt that leavened bread may be more proper than unfermented farinacea; but I cannot find any reason to believe that strong beer can ever be a proper remedy.

Practitioners have been divided in opinion concerning the use of milk in this disease. Zeviani, perhaps from theory, condemns the use of it; but Benevoli employed it without its impeding the cure of the disease. This last I have often remarked in the course of my own practice. As it is difficult to feed children entirely without milk; so I have commonly admitted it as a part of the diet of rickety children; and in many instances I can affirm, that it did not prevent the cure of the disease. In cases, however, of any appearance of rickets, and particulary of a slow dentition, I have dissuaded the continuance of a child upon the breast; because the milk of women is a more watery nourishment than that of cows: and I have especially dissuaded the continuing a child upon the breast, when I thought the nurse gave rather too much of such a watery nourishment; for, as has been above mentioned, I have had frequent occasion to suspect, that the milk of such nurses has a tendency to favour the coming on of rickets.

1735. Besides the remedies and regimen now mentioned, practitioners have commonly employed in this disease both emetics and purgatives. When the appetite and digestion are considerably impaired, vomiting, if neither violent, nor frequently repeated, seems to be of service; and by a moderate agitation of the abdominal viscera, may in some measure obviate the stagnation and consequent swelling that usually occur in them.

As the tumid state of the abdomen, so constantly to be met with in this disease, seems to depend very much upon a tympanitic affection of the intestines; so, both by obviating this, and by deriving from the abdominal viscera, frequent gentle purgatives may be of service. Zeviani, perhaps properly, recommends in particular rhubarb; which, besides its purgative quality, has those also of bitter and astringent.

1736. I have now mentioned most of the remedies commonly employed by the practitioners of former times; but I must not omit mentioning some others that have been lately suggested. The late Mr De Haen recommends the testacea; and assures us of their having been employed with success: but in the few trials which I have had occasion to make, their good effects did not appear.

The late Baron Van Swieten gives us one instance of rickets cured by the use of hemlock; but I do not know that the practice has been repeated.

BOOK III.

OF THE IMPETIGINES,

OR DEPRAVED HABIT, WITH AFFECTIONS OF THE SKIN.

ORD. III. IMPETIGINES.

Cachexiæ, cutem et externum corpus præcipue deformantes.

INTRODUCTION.

737. I FIND it difficult to give any sufficiently correct and
roper character of this order. The diseases comprehend-
l under it depend, for the most part, upon a depraved state
: the whole of the fluids, producing tumours, eruptions, or
:her preternatural affections of the skin. Although it be ex-
emely difficult to find a general character of the order that
ill apply to each of the genera and species, I shall here treat
: the principal genera which have been commonly comprehend-
l under this order, and which I have enumerated in my No-
logy.

CHAP. I.

OF SCROFULA, OR THE KING'S EVIL.

G. LXXXIII. Scrophula.—*Glandularum conglobatarum, præser tim in collo, tumores ; labium superius et columna nasi tumida ; faci florida, cutis levis ; tumidum abdomen.*

Sp. 1. *Scrophula (vulgaris) simplex, externa, permanens.*

Sp. 2. *Scrophula (mesenterica) simplex interna, cum palore faci inappetentia, tumore abdominis, et fœtore fœcum insolito.*

Sp. 3. *Scrophula (fugax) simplicissima, et tantum circa collu plerumque a resorptione ex ulceribus capitis proveniens.*

Sp. 4. *Scrophula (Americana) cum frambœsia conjuncta.*

1738. The character of this disease I have attempted in m Nosology; but it will be more properly taken from the wh of its history, now to be delivered.

1739. It is commonly, and very generally, a hereditary d ease ; and although it sometimes may, yet it rarely appears, b in children whose parents had at some period of their lives be affected with it. Whether it may not fail to appear in t children of scrofulous parents, and discover itself afterwa in their offspring in the succeeding generation, I cannot certai ly determine ; but believe that this has frequently happen It appears to me to be derived more commonly from fath than from mothers ; but whether this happens from their bei more scrofulous men than scrofulous women married, I not certain.

With respect to the influence of parents in producing this disease, it deserves to be remarked, that in a family of many children, when one of the parents has been affected with scrofula, and the other not; as it is usual for some of the children to be in constitution pretty exactly like the one parent, and others of them like the other; it commonly happens that those children who most resemble the scrofulous parent become affected with scrofula, while those resembling the other parent entirely escape.

1740. The scrofula generally appears at a particular period of life. It seldom appears in the first, or even in the second year of a child's life; and most commonly it occurs from the second, or, as some allege, and perhaps more properly, from the third, o the seventh year. Frequently, however, it discovers itself at a later period; and there are instances of its first appearance, at every period till the age of puberty; after which, however, the first appearance of it is very rare.

1741. When it does not occur very early, we can generally distinguish the habit of body peculiarly disposed to it. It most commonly affects children of soft and flaccid habits, of fair hair nd blue eyes; or at least affects those much more frequently han those of an opposite complexion. It affects especially children of smooth skins and rosy cheeks; and such children have requently a tumid upper lip, with a chop in the middle of it; nd this tumour is often considerable, and extended to the coumna nasi and lower part of the nostrils. The disease is someimes joined with, or follows rickets; and although it frequenty appears in children who have not had rickets in any great egree, yet it often attacks those who by a protuberant forehead, y tumid joints, and a tumid abdomen, show that they had some achitic disposition. In parents who, without having had the isease themselves, seem to produce scrofulous children, we an commonly perceive much of the same habit and constitution hat has been just now described.

Some authors have supposed that the small-pox has a tendency to produce this disease; and Mr De Haen asserts its following the inoculated more frequently than the natural small-pox. This last position, however, we can confidently affirm to be a mistake; although it must be allowed, that in fact the scrofula does often come on immediately after the small-pox. It is however difficult to find any connection between the two diseases. According to my observation, the accident only happens in children who have pretty manifestly the scrofulous disposition and I have had several instance of the natural small-pox coming upon children affected at the same time with scrofula, not only without this disease being anywise aggravated by the small pox, but even of its being for some time after much relieved.

1742. The scrofula generally shows itself first at a particula season of the year; and at some time between the winter an summer solstice; but commonly long before the latter period It is to be observed further, that the course of the disease i usually connected with the course of the seasons. Whilst th tumours and ulcerations peculiar to this disease appear first i the spring, the ulcers are frequently healed up in the course the succeeding summer, and do not break out again till the en suing spring, to follow again with the season the same cour as before.

1743. Frequently the first appearance of the disease is th tumid and chopped lip above mentioned. Upon other occ sions the first appearance is that of small spherical or oval tu mours, moveable under the skin. They are soft, but with som elasticity. They are without pain; and without any chan in the colour of the skin. In this state they often continue f a long time; even for a year or two, and sometimes longe Most commonly they first appear upon the sides of the ne below the ears; but sometimes also under the chin. In eith case, they are supposed to affect in these places the congloba or lymphatic glands only; and not at all the salivary glan till the disease is very greatly advanced. The disease frequen ly affects, and even at first appears in other parts of the body. In particular, it affects the joints of the elbows and ankles, or those of the fingers and toes. The appearances about the joints are not commonly, as elsewhere, small moveable swellings; but a tumour almost uniformly surrounding the joint, and interrupting its motion.

1744. These tumours, as I have said, remain for some time little changed; and, from the time they first appeared in the spring, they often continue in this way till the return of the same season in the next, or perhaps the second year after. About that time, however, or perhaps in the course of the season in which they first appear, the tumour becomes larger and more fixed; the skin upon it acquires a purple, seldom a clear redness: but growing redder by degrees, the tumour becomes softer, and allows the fluctuation of a liquid within to be perceived. All this process, however, takes place with very little pain attending it. At length some part of the skin becomes paler; and by one or more small apertures a liquid is poured out.

1745. The matter poured out has at first the appearance of pus, but it is usually of a thinner kind than that from phlegmonic abscesses; and the matter as it continues to be discharged, becomes daily less purulent, and appears more and more a viscid serum, intermixed with small pieces of a white substance resembling the curd of milk. By degrees the tumour almost entirely subsides, while the ulcer opens more, and spreads broader; unequally, however, in different directions, and therefore is without any regular circumscription. The edges of the ulcer are commonly flat and smooth, both on their outside and their inner edge, which seldom puts on a callous appearance. The ulcers, however, do not generally spread much, or become deeper; but at the same time their edges do not advance, or put on any appearance of forming a cicatrix.

1746. In this condition the ulcers often continue for a long time; while new tumours, with ulcers succeeding them in the manner above described, make their appearance in different parts of the body. Of the first ulcers, however, some heal up, while other tumours and ulcers appear in their vicinity, or in other parts of the body: and in this manner the disease proceeds, some of the ulcers healing up, at least to a certain degree, in the course of summer, and breaking out again in the succeeding spring: or it continues, by new tumours and ulcers succeeding them, in the spring season, making their appearance successively for several years.

1747. In this way the disease goes on for several years; but very commonly in four or five years it is spontaneously cured, the former ulcers being healed up, and no new tumours appearing: and thus at length the disease ceases entirely, leaving only some indelible eschars, pale and smooth, but in some parts shrivelled; or, where it had occupied the joints, leaving the motion of these impaired, or entirely destroyed.

1748. Such is the most favourable course of this disease; and with us it is more frequently such than otherwise: but it is often a more violent, and sometimes a fatal malady. In these cases, more parts of the body are at the same time affected; the ulcers also seeming to be imbued with a peculiarly sharp acrimony, and therefore becoming more deep, eroding, spreading, as well as seldomer healing up. In such cases, the eyes are often particularly affected. The edges of the eyelids are affected with tumour and superficial ulcerations; and these commonly excite obstinate inflammation in the adnata, which frequently produces an opacity of the cornea.

When the scrofula especially affects the joints, it sometimes produces there considerable tumours; in the abscesses following which, the ligaments and cartilages are eroded, and the adjoining bones are affected with a caries of a peculiar kind. In those cases, also, of more violent scrofula, while every year produces a number of new tumours and ulcers, their acrimony seems at length to taint the whole fluids of the body, occasioning various disorders; and particularly a hectic fever, with all its symp-oms, which at length proves fatal, with sometimes the symp-oms of a phthisis pulmonalis.

1749. The bodies of persons who have died of this disease how many of the viscera in a very morbid state; and particu-arly most of the glands of the mesentery very much tumefied, nd frequently in an ulcerated state. Commonly also a great umber of tubercles or cysts, containing matter of various kinds, appear in the lungs.

1750. Such is the history of the disease: and from thence it may appear, that the nature of it is not easily to be ascertained. It seems to be a peculiar affection of the lymphatic system; and this in some measure accounts for its connection with a particular period of life. Probably, however, there is a peculiar acrimony of the fluids that is the proximate cause of the disease; although of what nature this is, has not yet been discovered. It may perhaps be generally diffused in the system, and exhaled into the several cavities and cellular texture of the body; and therefore, being taken up by the absorbents, may discover itself especially in the lymphatic system. This, however, will hardly account for its being more confined to that system, than happens in the case of many other acrimonies which may be supposed to be as generally diffused. In short, its appearance in particular constitutions, and at a particular period of life, and even its being a hereditary disease, which so frequently depends upon the transmission of a peculiar constitution, are all of them circumstances which lead me to conclude, upon the whole, that this disease depends upon a *peculiar constitution of the lymphatic system.*

1751. It seems proper to observe here, that the scrofula does not appear to be a contagious disease; at least I have known many instances of sound children having had frequent and close intercourse with scrofulous children without being infected with the disease. This certainly shows, that in this disease the peculiar acrimony of it is not exhaled from the surface of the body, but that it depends especially upon a peculiar constitution of the system.

1752. Several authors have supposed the scrofula to have been derived from the venereal disease; but upon no just grounds that I can perceive. In very many instances, there can hardly be any suspicion of the parents producing this disease having been imbued with syphilis, or with any syphilitic taint; and I have known several examples of parents conveying syphilis to their offspring, in whom, however, no scrofulous symptoms at any time afterwards appeared. Further, the symptoms of the two diseases are very different; and the difference of their natures appears particularly from hence, that while mercury commonly and readily cures the syphilis, it does no service in scrofula, and very often rather aggravates the disease.

1753. For the cure of scrofula, we have not yet learned any practice that is certainly or even generally successful.

The remedy which seems to be the most successful, and which our practitioners especially trust to and employ, is the use of mineral waters; and indeed the washing out, by means of these, the lymphatic system, would seem to be a measure promising success: but in very many instances of the use of these waters, I have not been well satisfied that they had shortened the duration of the disease more than had often happened when no such remedy had been employed.

1754. With regard to the choice of the mineral waters most fit for the purpose, I cannot with any confidence give an opinion. Almost all kinds of mineral waters, whether chalybeate sulphureous, or saline, have been employed for the cure o scrofula, and seemingly with equal success and reputation : circumstance which leads me to think, that if they are ever successful, it is the alimentary water that is the chief part o the remedy.

Of late, sea-water has been especially recommended and employed; but after numerous trials, I cannot yet discover its superior efficacy.

1755. The other remedies proposed by practical writers are very numerous; but upon that very account, I apprehend they are little to be trusted; and as I cannot perceive any just reason for expecting success from them, I have very seldom employed them.

Of late, the Peruvian bark has been much recommended; and as in scrofulous persons there are generally some marks of laxity and flaccidity, this tonic may possibly be of service; but in a great variety of trials, I have never seen it produce any immediate cure of the disease.

In several instances, the leaves of coltsfoot have appeared to me to be successful. I have used it frequently in a strong decoction, and even then with advantage; but have found more benefit from the expressed juice, when the plant could be had in somewhat of a succulent state, soon after its first appearance in the spring.

1756. I have also frequently employed the hemlock, and have sometimes found it useful in discussing obstinate swellings: but in this it has also often disappointed me; and I have not at any time observed that it disposed scrofulous ulcers to heal.

I cannot conclude the subject of internal medicines without remarking, that I have never found either mercury or antimony, in any shape, of use in this disease; and when any degree of a feverish state had come on, the use of mercury proved manifestly hurtful.

1757. In the progress of scrofula, several external medicines are requisite. Several applications have been used for discussing the tumours upon their first coming on; but hitherto my own practice, in these respects, has been attended with very little success. The solution of saccharum saturni has seemed to be useful; but it has more frequently failed: and I have had no better success with the spiritus Mindereri. Fomentations of every kind have been frequently found to do harm; and poultices seem only to hurry on a suppuration. I am doubtful if this last be ever practised with advantage; for scrofulous tumours sometimes spontaneously disappear, but never after any degree of inflammation has come upon them; and therefore poultices, which commonly induce inflammation, prevent that discussion of tumours, which might otherwise have happened.

Even when scrofulous tumours have advanced towards suppuration, I am unwilling to hasten the spontaneous opening, or to make it by the lancet, because I apprehend the scrofulous matter is liable to be rendered more acrid by communication with the air, and to become more eroding and spreading than when in its inclosed state.

1758. The management of scrofulous ulcers has, so far as I know, been as little successful as that of the tumours. Escharotic preparations, of either mercury or copper, have been sometimes useful in bringing on a proper suppuration, and thereby disposing the ulcer to heal; but they have seldom succeeded, and more commonly they have caused the ulcer to spread more. The escharotic from which I have received most benefit is burnt alum; and a portion of that mixed with a mild ointment has been as useful an application as any I have tried. The application, however, that I have found most serviceable, and very universally admissible, is that of linen cloths wetted with cold water, and frequently changed when they are becoming dry, it being inconvenient to let them be glued to the sore They are therefore to be changed frequently during the day; and a cloth spread with a mild ointment or plaster may be applied for the night. In this practice I have sometimes employed sea-water; but generally it proved too irritating; and neither that nor any mineral water has appeared to be of more service than common water.

1759. To conclude what I have to offer upon the cure o scrofula, I must observe, that cold bathing seems to have been of more benefit than any other remedy that I have had occasion to see employed.

CHAP. II.

OF SYPHILIS, OR THE VENEREAL DISEASE.

G. LXXXIV. SYPHILIS.—*Morbus contagiosus, post concubitum impurum, et genitalium morbum, ulcera tonsillarum ; cutis, præsertim ad marginem capillitii, papulæ corymbosæ, in crustas et in ulcera crustosa abeuntes ; dolores ostocopi ; exostoses.*

1760. AFTER practitioners have had so much experience in treating this disease, and after so many books have been published upon the subject, it does not seem necessary, or even proper, for me to attempt any full treatise concerning it ; and I shall therefore confine myself to such general remarks, as may serve to illustrate some parts of the pathology or of the practice.

1761. It is sufficiently probable, that anciently, in certain parts of Asia, where the leprosy prevailed, and in Europe after that disease had been introduced into it, a disease of the genitals, resembling that which now commonly arises from syphilis had frequently appeared : but it is equally probable, that a new disease, and what we at present term *Syphilis*, was first brought into Europe about the end of the fifteenth century ; and that the distemper now so frequently occurring has been very entirely derived from that which was imported from America at the period mentioned.

1762. This disease, at least in its principal circumstances, never arises in any person but from some communication with a person already affected with it. It is most commonly contracted in consequence of coition with an infected person ; but in what manner the infection is communicated, is not clearly explained. I am persuaded, that in coition, it is communicated without there being any open ulcer either in the person communicating, or in the person receiving the infection; but in all other cases, I believe it is never communicated in any other way than by a contact of ulcer, either in the person communicating or in the person receiving the infection.

1763. As it thus arises from the contact of particular parts, so it always appears first in the neighbourhood of the parts to which the infecting matter had been immediately applied; and therefore, as most commonly contracted by coition, it generally appears first in the genitals.

1764. After its first appearance in particular parts, more especially when these are the genitals of either sex, its effects for some time seem to be confined to these parts; and indeed in many cases never extends further. In other cases, however, the infecting matter passes from the parts first affected, and from the genitals therefore into the blood-vessels; and being there diffused, produces disorders in many other parts of the body.

From this view of the circumstances, physicians have very properly distinguished the different states of the disease, according as they are local or are more universal. To the former, they have adapted appellations suited to the manner in which the disease appears; and to the other, the general affection, they have almost totally confined the appellations of *Syphilis*, *Lues Venerea*, or *Pox*. In the remarks I am now to offer, I shall begin with considering the local affection.

1765. This local affection appears chiefly in the form of gonorrhœa or chancre.

The phenomena of gonorrhœa, either upon its first coming on, or in its after progress, or the symptoms of ardor urinæ, chordee, or others attending it, it is not necessary for me to describe. I shall only here observe, that the chief circumstance to be taken notice of, is the inflamed state of the urethra, which I take to be inseparable from the disease.

1766. In these well-known circumstances, the gonorrhœa continues for a time longer or shorter, according to the constitution of the patient; it usually remaining longest in the most vigorous and robust, or according to the patient's regimen, and the care taken to relieve or cure the disease. In many cases, if by a proper regimen the irritation of the inflamed state is carefully avoided, the gonorrhœa spontaneously ceases, the symptoms of inflammation gradually abating, the matter discharged becoming of a thicker and more viscid consistence, as well as of a whiter colour; till at length, the flow of it ceases altogether; and whether it be thus cured spontaneously, or by art, the disease often exists without communicating any infection to the other parts of the body.

1767. In other cases, however, the disease having been neglected, or by an improper regimen aggravated, it continues with all its symptoms for a long time; and produces various other disorders in the genital parts, which, as commonly taken notice of by authors, need not be described here. I shall only observe, that the inflammation of the urethra, which at first seems to be seated chiefly, or only, in its anterior parts, is in such neglected and aggravated cases spread upwards along the urethra, even to the neck of the bladder. In these circumstances, a more considerable inflammation is occasioned in certain parts of the urethra: and consequently, suppuration and ulcer are produced, by which the venereal poison is sometimes communicated to the system, and gives rise to a general syphilis.

1768. It was some time ago a pretty general supposition, that the gonorrhœa depended always upon ulcers of the urethra, producing a discharge of purulent matter; and such ulcers do indeed sometimes occur in the manner that has been just now mentioned. We are now assured, however, from many dissections of persons who had died when labouring under a gonorrhœa, that the disease may exist, and from many considerations it is probable that it commonly does exist, without any ulceration of the urethra; so that the discharge which appears, is entirely that of a vitiated mucus from the mucous follicles of the urethra.

1769. Although most of the symptoms of gonorrhœa should be removed, yet it often happens that a mucous fluid continues to be discharged from the urethra for a long time after; and sometimes for a great part of a person's life. This discharge is what is commonly called a *Gleet*.

With respect to this, it is proper to observe, that in some cases, when it is certain that the matter discharged contains no venereal poison, the matter may, and often does put on that puriform appearance, and that yellow and greenish colour, which appears in the discharge at the beginning and during the course of a virulent gonorrhœa. These appearances in the matter of a gleet, which before had been of a less coloured kind, have frequently given occasion to suppose that a fresh infection had been received; but I am certain that such appearances may be brought on by perhaps various other causes; and particularly, by intemperance in venery and drinking concurring together. I believe, indeed, that this seldom happens to any but those who had before frequently laboured under a virulent gonorrhœa, and have more or less of gleet remaining with them: but I must also observe, that in persons who at no period of their life had ever laboured under a virulent gonorrhœa, or any other symptom of syphilitic affection, I have met with instances of discharges from the urethra resembling those of a virulent gonorrhœa.

The purpose of these observations is, to suggest to practitioners what I have not found them always aware of, that in persons labouring under a gleet, such a return of the appearances of a virulent gonorrhœa may happen without any new infection having been received, and consequently not requiring the treatment which a new infection might perhaps demand. When in the cure of gonorrhœa it was the practice to employ purgatives very frequently, and sometimes those of the drastic kind, I have known the gleet, or spurious gonorrhœa, by such a practice much increased, and long continued, and the patient's constitution very much hurt. Nay, in order more certainly further to prevent mistakes, it is to be observed, that the spurious gonorrhœa is sometimes attended with heat of urine, and some degree of inflammation: but these symptoms are seldom considerable, and, merely by the assistance of a cool regimen, commonly disappear in a few days.

1770. With respect to the cure of a virulent gonorrhœa, I have only to remark, that if it be true, as I have mentioned above, that the disease will often, under a proper regimen, be spontaneously cured; and that the whole of the virulent matter may be thus entirely discharged without the assistance of art; it would seem that there is nothing required of practitioners but to moderate and remove that inflammation which continues the disease, and occasions all the troublesome symptoms that ever attend it. The sole business therefore of our art in the cure of gonorrhœa, is to take off the inflammation accompanying it: and this I think may commonly be done, by avoiding exercise, by using a low and cool diet, by abstaining entirely from fermented and spiritous liquors, and by taking plentifully of mild diluent drinks.

1771. The heat of urine, which is so troublesome in this disease, as it arises from the increased sensibility of the urethra in its inflamed state; so, on the other hand, the irritation of the urine has the effect of increasing the inflammation, and is therefore to be removed as soon as possible. This can be done most effectually by taking in a large quantity of mild watery liquors. Demulcents may be employed; but unless they be accompanied with a large quantity of water, they will have little effect. Nitre has been commonly employed as a supposed refrigerant; but, from much observation, I am convinced, that in a small quantity it is useless, and in a large quantity certainly hurtful; and, for this reason, that every saline matter passing with the urine generally gives some irritation to the urethra. To prevent the irritation of the urethra arising from its increased sensibility, the injection of mucilage or of mild oil into it has been practised; but I have seldom found this of much service.

1772. In gonorrhœa, as costiveness may be hurtful, both by an irritation of the system in general, and of the urethra in particular, as this is occasioned always by the voiding of hardened fæces; so costiveness is to be carefully avoided or removed; and the frequent use of large glysters of water and oil I have found of remarkable benefit in this disease. If glysters, however, do not entirely obviate costiveness, it will be necessary to give laxatives by the mouth; which, however, should be of the mildest kind, and should do no more than keep the belly regular and a little loose, without much purging.

The practice of frequent purging, which was formerly so much in use, and is not yet entirely laid aside, has always appeared to me to be generally superfluous, and often very hurtful. Even what are supposed to be cooling purgatives, such as Glauber's salt, soluble tartar, and crystals of tartar, in so far as any part of them pass by urine, they, in the same manner as we have said of nitre, may be hurtful; and so far as they produce very liquid stools, the matter of which is generally acrid, they irritate the rectum, and consequently the urethra. This last effect, however, the acrid, and in any degree drastic purgatives, more certainly produce.

1773. In cases of gonorrhœa attended with violent inflammation, blood-letting may be of service; and in the case of persons of a robust and vigorous habit, in whom the disease is commonly the most violent, blood-letting may be very properly employed. As general bleedings, however, when there is no phlogistic diathesis in the system, have little effect in removing topical inflammation; so in gonorrhœa, when the inflammation is considerable, topical bleeding applied to the urethra by leeches is generally more effectual in relieving the inflammation.

1774. When there is any phymosis attending a gonorrhœa, mollient fomentations applied to the whole penis are often of ervice. In such cases it is necessary, and in all others useful, o keep the penis laid up to the belly, when the patient either valks about or is sitting.

1775. Upon occasion of frequent priapism and chordee, t has been found useful to apply to the whole of the penis a oultice of crumb of bread moistened with a strong solution of ugar of lead. I have, however, been often disappointed in his practice, perhaps by the poultice keeping the penis too varm, and thereby exciting the very symptoms I wished to preent. Whether lotions of the external urethra, with a soution of the sugar of lead, might be useful in this case, I have ot properly tried.

1776. With respect to the use of injections, so frequently mployed in gonorrhœa, I am persuaded, that the early use of atringent injections is pernicious; not by occasioning a syphis, as has been commonly imagined; but by increasing and iving occasion to all the consequences of the inflammation, articularly to the very troublesome symptom of swelled tescles. When, however, the disease has continued for some ime, and the inflammatory symptoms have very much abated, am of opinion, that by injections of moderate astringency, or t least of this gradually increased, an end may be sooner ut to the disease than would otherwise have happened; and hat a gleet, so readily occurring, may be generally prevented.

1777. Besides the use of astringent injections, it has been ommon enough to employ those of a mercurial kind. With espect to these, although I am convinced that the infection roducing gonorrhœa, and that producing chancres and syphilis, re one and the same; yet I apprehend, that in gonorrhœa merury cannot be of use by correcting the virulence of the infection; nd therefore that it is not universally necessary in this disease. am persuaded, however, that mercury applied to the internal urface of the urethra, may be of use in promoting the more ull and free discharge of virulent matter from the mucous glands of it. Upon this supposition, I have frequently employed mercurial injections, and, as I judge, with advantage; those injections often bringing on such a state of the consistence and colour of the matter discharged, as we know usually to precede its spontaneous ceasing. I avoid these injections, however, in recent cases, or while much inflammation is still present; bu when that inflammation has somewhat abated, and the discharge notwithstanding still continues in a virulent form, I employ mercurial injections freely. I employ those only tha contain mercury entirely in a liquid form, and avoid those which may deposite an acrid powder in the urethra. Tha which I have found most useful is a solution of the corrosive sublimate in water; so much diluted as not to occasion any violent smarting, but not so much diluted as to giv no smarting at all. It is scarce necessary to add, that whe there is reason to suspect there are ulcerations already forme in the urethra, mercurial injections are not only proper, but th only effectual remedy that can be employed.

1778. With regard to the cure of gonorrhœa, I have onl one other remark to offer. As most of the symptoms aris from the irritation of a stimulus applied, the effects of this irr tation may be often lessened by diminishing the irritability the system; and it is well known that the most certain mea of accomplishing this is by employing opium. For that reason consider the practice both of applying opium directly to the rethra, and of exhibiting it by the mouth, to be extremely us ful in most cases of gonorrhœa.

1779. After thus offering some remarks with respect to g norrhœa in general, I might proceed to consider particularly t various symptoms which so frequently attend it; but it do not seem necessary for me to attempt this after the late pub cations of Dr Foart Simmons, and of Dr Schwediauer, wh have treated the subject so fully, and with so much discernme and skill.

1780. The other form of the local affection of syphilis, is th of chancre. The ordinary appearance of this I need not d

cribe, it having been already so often done. Of the few re-
narks I have to offer, the first is, that I believe chancres never
ppear in any degree without immediately communicating to the
lood more or less of the venereal poison; for I have constantly,
vhenever chancres had appeared, found, that unless mercury
vas immediately given internally, some symptoms of a general
yphilis did certainly come on afterwards; and though the in-
ernal use of mercury should prevent any such appearance, it is
till to be presumed that the poison had been communicated,
ecause mercury could act upon it in no other manner than as
iffused in the fluids.

1781. It has been a question among practitioners, upon the
ubject of chancres, Whether they may be immediately healed
p by applications made to the chancres, or if they should be
ft open for some time without any such application? It has
een supposed, that the sudden healing up of chancres might
nmediately force into the blood a poison, which might have
een excluded by being discharged from the chancre. This,
owever, is a supposition that is very doubtful; and, upon the
ther hand, I am certain, that the longer a chancre is kept o-
en, the more poison it perhaps generates, and certainly sup-
lies it more copiously to the blood. And although the above-
entioned supposition were true, it will be of little conse-
uence, if the internal use of mercury, which I judge necessa-
y in every case of chancre, be immediately employed. I have
ften seen very troublesome consequences follow from allow-
g chancres to remain unhealed; and the symptoms of general
philis have always seemed to me to be more considerable and
iolent in proportion as chancres had been suffered to remain
nger unhealed. They should always, therefore, be healed as
on as possible; and that by the only very effectual means, the
pplication of mercurials to the chancre itself. Those that are
cent, and have not yet formed any considerable ulcer, may
ften be healed by the common mercurial ointment; but the

most powerful means of healing them, has appeared to me tc be the application of red precipitate in a dry powder.

1782. When, in consequence of chancres, or of the othe circumstances above mentioned, by which it may happen, th venereal poison has been communicated to the blood, it produces many different symptoms in different parts of the body not necessary to be enumerated and described here, that having been already done by many authors with great accuracy.

1783. Whenever any of those symptoms do in any degree appear, or as soon as it is known that the circumstances whic give occasion to the communication of the venereal poison hav taken place, I hold the internal use of mercury to be immediately necessary; and I am well persuaded, that mercury employed without delay, and in sufficient quantity, will pretty ce tainly prevent the symptoms which would otherwise have soo appeared, or will remove those that may have already discove ed themselves. In both cases, it will secure the person fro any future consequences of syphilis from that infection.

1784. This advice for the early and full use of mercury, take to be the most important that can be given with respect the venereal disease: And although I must admit that the vir lence of the poison may be greater in one case than in anothe and even that one constitution may be more favourable th another, to the violence of the disease; yet I am thorougl convinced, that most of the instances which have occurred the violence and obstinacy of syphilis, have been owing ve entirely to the neglect of the early application of mercury.

1785. Whatever other remedies of syphilis may be kno or may hereafter be found out, I cannot pretend to determi but I am well persuaded, that in most cases mercury prope employed will prove a very certain and effectual remedy. W respect to others that have been proposed, I shall offer this mark only, that I have found the decoction of the mezer contribute to the healing of ulcers which seem to have resis the power of mercury.

1786. With regard to the many and various preparations of ercury, I do not think it necessary to give any enumeration of em here, as they are commonly very well known, and have een lately well enumerated by Dr Schwediauer. The choice f them seems to be for the most part a matter of indifference; s I believe cures have been, and still may be effected by any different preparations, if properly administered. The roper administration seems to consist, 1*st*, In the choosing ose preparations which are the least ready to run off by stool; nd therefore the applications externally by unction are in any cases the most convenient. 2*dly*, In employing the uncon, or in giving a preparation of mercury internally, in such uantity as may show its sensible effects in the mouth. And, *dly*, Without carrying these effects to a greater length, in the ontinuing the employment of mercury for several weeks, or ll the symptoms of the disease shall have for some time enirely disappeared. I say nothing of the regimen proper and ecessary for patients during the employment of mercury, beause I presume it to be very well known.

1787. Amongst the other preparations of mercury, I believe he corrosive sublimate has often been employed with advange; but I believe also, that it requires being continued for a onger time than is necessary in the employment of other prearations in the manner above proposed; and I suspect it has ften failed in making a cure, because employed while persons vere at the same time exposed to the free air.

1788. Upon these points, and others relative to the adminitration of mercury, and the cure of this disease, I might offer ome particular remarks; but I believe they are generally unlerstood; and it is enough for me to say here, that if practiioners will attend, and patients will submit to the general rules iven above, they will seldom fail of obtaining a certain and peedy cure of the disease.

CHAP. III.

OF SCURVY.

G. LXXXV. Scorbutus.—*In regione frigida post victum putrescentem, salitum, ex animalibus confectum, deficiente simul materia vegetabili recente; asthenia; stomacace; in cute maculæ diversi-colores, plerumque livescentes, præsertim ad pilorum radices.*

1789. This disease appears so frequently, and the effects of it are so often fatal in fleets and armies, that it has very properly engaged the particular attention of physicians. It is indeed surprising, that it had not sooner attracted the especial notice both of statesmen and physicians, so as to have produced those measures and regulations that might prevent the havoc which it so often occasions. Within these last fifty years, however, it has been so much attended to and studied, that we might suppose every circumstance relating to it so fully and exactly ascertained, as to render all further labour upon the subject superfluous. This perhaps may be true; but it appears to me, that there are still several circumstances regarding the disease not agreed upon among physicians, as well as different opinions formed, some of which may have a bad effect upon the practice; and this seems to me to be so much the case, that I hope I shall be excused in endeavouring here to state the facts as they appear to me fron the best authorities, and to offer remarks upon opinions whicl may influence the practice in the prevention and cure of thi disease.

1790. With respect to the phenomena of the disease, they have now been so fully observed, and so accurately described that there is no longer any doubt in discerning the disease wher t is present, or in distinguishing it from almost every other ailment. In particular, it seems now to be fully determined, that there is one disease only entitled to the appellation of Scurvy; that it is the same upon the land as upon the sea; that it is the same in all climates and seasons, as depending every where upon nearly the same causes; and that it is not at all diversified, either in its phenomena or its causes, as had been imagined some time ago.

1791. The phenomena of scurvy, therefore, are not to be described here, as it has been so fully and accurately done elsewhere; and I shall only endeavour to ascertain those facts with respect to the prevention and cure of the disease which seem not yet to be exactly agreed upon. And, first, with respect to the antecedents that may be considered as the remote causes of the disease.

1792. The most remarkable circumstance amongst the antecedents of this disease is, that it has most commonly happened to men living very much on salted meats; and whether it ever arise in any other circumstances, is extremely doubtful. These meats are often in a putrescent state; and to the circumstance of the long continued use of animal food in a putrescent and somewhat indigestible state, the disease has been especially attributed. Whether the circumstance of the meat's being salted, has any effect in producing the disease, otherwise than by being rendered more indigestible, is a question that remains still in dispute.

1793. It seems to me, that the salt concurs in producing the effect; for there is hardly any instance of the disease appearing unless where salted meats had been employed, and scarcely an example where the long continued use of these did not produce it: besides all which, there are some instances where, by avoiding salted meats, or by diminishing the proportion of them in diet, while other circumstances remained much the same, the disease was prevented from appearing. Further, if it may be admitted as an argument upon this subject, I shall hereafter endeavour to show, that the large use of salt has a tendency to aggravate and increase the proximate cause of scurvy.

1794. It must however be allowed, that the principal circumstance in causing scurvy, is the living very much and very long upon animal food, especially when in a putrescent state; and the clear proof of this is, that a quantity of fresh vegetable food will always certainly prevent the disease.

1795. While it has been held, that, in those circumstances in which scurvy is produced, the animal food employed was especially hurtful by its being of difficult digestion, this opinion has been attempted to be confirmed, by observing, that the rest of the food employed in the same circumstances was also of difficult digestion. This is supposed to be especially the case of unfermented farinacea which so commonly makes a part of the sea-diet: but I apprehend this opinion to be very ill founded; for the unfermented farinacea, which are in a great proportion the food of infants, of women, and of the greater part of mankind, can hardly be supposed to be food of difficult digestion: and with respect to the production of scurvy, there are facts which show, that unfermented farinacea, employed in large proportion, have had a considerable effect in preventing the disease.

1796. It has been imagined, that a certain impregnation of the air upon the sea had an effect in producing scurvy. But it is altogether improbable: for the only impregnations which could be suspected, are those of inflammable or mephitic air; and it is now well known, that these impregnations are much less in the air upon the sea than in that upon the land; besides, there are otherwise many proofs of the salubrity of the sea-air. If therefore sea-air have any effect in producing scurvy, it must be by its sensible qualities of cold or moisture.

1797. That cold has an effect in favouring the production of scurvy, is manifest from hence, that the disease is more frequent and more considerable in cold than in warm climates and easons; and that even warm clothing has a considerable effect n preventing it.

1798. Moisture may in general have an effect in favouring the production of scurvy, where that of the atmosphere in which men are placed is very considerable: but the ordinary moisture of the sea-air is far from being such. Probably it is never considerable, except in the case of unusual rains; and even then, it is perhaps by the application of moisture to the bodies of men in damp clothing only that it has any share in the production of scurvy. At the same time, I believe there is no instance of either cold or moisture producing scurvy, without the concurrence of the faulty sea diet.

1799. Under those circumstances which produce scurvy, it commonly seems to occur most readily in the persons who are the least exercised; and it is therefore probable, that confinement and want of exercise may have a great share in producing the disease.

1800. It appears that weakness, in whatever manner occasioned, is favourable to the production of scurvy. It is therefore probable that unusual labour and fatigue may often have some share in bringing it on: and upon the same account, it is probable, that sadness and despondency may induce a weakness of the circulation, and be thereby, as has been remarked, favourable to the production of scurvy.

1801. It has also been observed, that persons negligent in keeping their skin clean by washing and change of clothing, are more liable than others to be affected with scurvy.

1802. Several of these causes, now mentioned, concurring together, seem to produce scurvy; but there is no proper evidence that any one of them alone will produce it, or that all the others uniting together will do it, without the particular concurrence of the sea diet. Alongst with this, however, several of the other circumstances mentioned have a great effect in producing it sooner, and in a more considerable degree, than would otherwise have happened from the diet alone.

1803. From this view of the remote causes it will readily appear that the prevention of the disease may in some measure depend upon the avoiding of those circumstances which we have enumerated as contributing to bring on the disease sooner than it would otherwise come on. At the same time, the only effectual means will be, by avoiding the diet of salted meats; at least by lessening the proportion of these, and using meat preserved otherwise than by salt; by using in diet any kind of esculent vegetable matter that can be obtained; and especially by using vegetable matters the most disposed to acescency, such as malt; and by drinking a large quantity of pure water.

1804. The cure of scurvy seems now to be very well ascertained; and when the necessary means can be obtained, the disease is commonly removed very quickly. The chief means is a food of fresh and succulent vegetables, and those almost of any kind that are at all esculent. Those most immediately effectual are the acid fruits, and, as being of the same nature, all sorts of fermented liquor.

1805. The plants named *alkalescent*, such as those of the garlic tribe and of the tetradynamiæ, are also particularly useful in the cure of this disease; for, notwithstanding their appellation, they in the first part of their fermentation undergo an acescency, and seem to contain a great deal of acescent matter At the same time, they have generally in their composition an acrid matter that readily passes by urine, probably by perspiration; and, by promoting both excretions, are useful in the disease. It is probable, that some plants of the coniferous tribe, such as the spruce fir, and others possessed of a diuretic power, may likewise be of some use.

1806. It is sufficiently probable, that milk of every kind and particularly its productions, whey and butter-milk, may prove a cure of this disease.

1807. It has been common in this disease to employ the fossil acids; but there is reason to doubt if they be of any service, and it is certain they are not effectual remedies. They an hardly be thrown in, in such quantity as to be useful an-iseptics; and as they do not seem to enter into the composi-ion of the animal fluids, and probably pass off unchanged by he excretions, so they can do little in changing the state of the fluids.

1808. The great debility which constantly attends scurvy, has naturally led physicians to employ tonic and strengthening medicines, particularly the Peruvian bark; but the efficacy of it seems to me very doubtful. It is surprising how soon the use of a vegetable diet restores the strength of scorbutic persons; which seems to show that the preceding debility had depended upon the state of the fluids; and consequently till the sound state of these can be restored, no tonic remedy can have much effect: but as the Peruvian bark has little power in changing the state of the fluids, so it can have little effect in scurvy.

1809. I shall conclude my observations upon the medicines employed in scurvy, with remarking, that the use of mercury is always manifestly hurtful.

1810. After having observed that both the prevention and cure of this disease are now very well known, it may seem unnecessary to enter into much discussion concerning its proximate cause: but as such discussions can hardly be avoided, and as false opinions may in some measure corrupt the practice, I shall venture to suggest here what appears to me most probable upon the subject.

1811. Notwithstandiug what has been asserted by some eminent persons, I trust to the concurring testimony of the most part of the authors upon the subject, that in scurvy, the fluids suffer a considerable change.

From these authors we learn, that in the blood drawn from the veins of persons labouring under the scurvy, the crassamentum is different both in colour and consistence from what it is in healthy persons; and that at the same time the serum is commonly changed both in colour and taste. The excretions also, in scorbutic persons, show a change in the state of the fluids. The breath is fœtid; the urine is always high-coloured, and more acrid than usual; and if that acrid exsudation from the feet, which Dr Hulme takes notice of, happens especially in scorbutic persons, it will be a remarkable proof to the same purpose. But however this may be, there is evidence enough that in scurvy the natural state of the fluids is considerably changed. Further, I apprehend it may be confidently presumed from this, that the disease is brought on by a particular nourishment introduced into the body, and is as certainly cured by the taking in of a different diet. In the latter case, the diet used has no other evident operation, than that of giving a particular state and condition to the fluids.

1812. Presuming, therefore, that the disease depends upon a particular condition of the fluids of the body, the next subject of inquiry is, What that condition may be?

With this view, I must observe, that the animal economy has a singular power of changing acescent aliments, in such a manner as to render them much more disposed to putrefaction: and although, in a living state, they hardly ever proceed to an actually putrid state, yet in man, whose aliment is of a mixed kind, it is pretty certain, that if he were to live entirely upon animal food, without a frequent supply of vegetable aliment, his fluids would advance further towards putrefaction than is consistent with health. This advance towards putrefaction seems to consist in the production and evolution of a saline matter which did not appear in the vegetable aliment, and could not be produced or evolved in it, but by carrying on its fermentation to a putrefactive state. That this saline state is constantly in some measure produced and evolved by the animal process, appears from this, that certain excretions of saline matter are constantly made from the human body, and are therefore presumed necessary to its health.

From all this, it may be readily understood, how the continual use of animal food, especially when already in a putrescent state, without a mixture of vegetable, may have the effect of carrying the animal process too far, and particularly of producing and evolving a larger proportion of saline matter. That such a preternatural quantity of saline matter does exist in the blood of scorbutic persons, appears from the state of the fluids above mentioned. It will be a confirmation of all this to observe, that every interruption of perspiration, that is, the retention of saline matter, contributes to the production of scurvy; and this interruption is especially owing to the application of cold, or to whatever else weakens the force of the circulation, such as the neglect or want of exercise, fatigue, and despondency of the mind. It deserves indeed to be remarked here, that one of the first effects of the scurvy once induced, is very soon to occasion a great debility of the system, which occasions of course a more rapid progress of the disease. How the state of the fluids may induce such debility is not well understood; but that it does depend upon such a state of the fluids, is rendered sufficiently presumable from what has been said above with regard to both the causes and the cure of scurvy.

1813. It is possible, that this debility may have a great share in producing several of the phenomena of scurvy; but a preternaturally saline, and consequently dissolved state of the blood, will account for them with more probability; and I do not think it necessary to persons who are at all accustomed to reason upon the animal economy, to explain this matter more fully. I have only to add, that if my opinion in supposing the proximate cause of scurvy to be a preternaturally saline state of the blood be at all founded, it will be sufficiently obvious, that the throwing into the body, along with the aliment, an unusual quantity of salt, may have a great share in producing the disease. Even supposing such salt to suffer no change in the animal body, the effect of it may be considerable; and this will be rendered still more probable, if it may be presumed, that all neutral salts, consisting of a fixed alkali, are changed in the animal body into an ammoniacal salt; which I apprehend to be that especially prevailing in scurvy. If I be at all right in concluding, that meats, from being salted, contribute to the production of scurvy, it will readily appear, how dangerous it may be to admit the conclusion from another theory, that they are perfectly innocent.

1814. Having thus endeavoured to explain what relates to the cure of scurvy in general, I judge it proper to leave to other authors what relates to the management of those symptoms, which require a particular treatment.

CHAP. IV.

OF JAUNDICE.

G. XC. ICTERUS.—*Flavedo cutis et oculorum; fæces albidæ; urina obscure rubra, immissa colore luteo tingens.*

Sp. 1. *Icterus (calculosus) cum dolore in regione epigastrica acuto, post pastum aucto, et cum dejectione concretionum biliosarum.*

Sp. 2. *Icterus (spasmodicus) sine dolore, post morbos spasmodicos et pathemata mentis.*

Sp. 3. *Icterus (hepaticus) sine dolore, post morbos hepatis.*

Sp. 4. *Icterus (gravidarum) sub graviditate oriens, et post partum abiens.*

Sp. 5. *Icterus (infantum) in infantibus haud diu post natales oriens.*

1815. I HAVE here passed over several of the titles in my Nosology, because they are diseases not of this island. In these, therefore, I have no experience; and without that, the compiling from other writers is always extremely fallacious. For these reasons I omit them; and shall now only offer some emarks upon the subject of jaundice, the last in order that I an possibly introduce into my course of Lectures.

1816. The jaundice consists in a yellow colour of the skin ver the whole body, and particularly of the adnata of the eyes. This yellow colour may occur from different causes: but in the aundice, hereafter to be more exactly characterized, I judge it o depend upon a quantity of bile present in the mass of blood, nd which, thrown out upon the surface, gives its own proper olour to the skin and eyes.

1817. That the disease depends upon this, we know particuarly and certainly from the causes by which it is produced. In order to explain these, I must observe, that bile does not exist in its proper form in the mass of blood, and cannot appear n this form till it has passed the secretory organ of the liver. The bile therefore cannot appear in the mass of blood, or upon the surface of the body, that is, produce jaundice from any interruption of its secretion; and accordingly, if jaundice does appear, it must be in consequence of the bile, after it had been secerned, being again taken into the blood-vessels.

This may happen in two ways; either by an interruption of its excretion, that is, of its passage into the duodenum, which by accumulating it in the biliary vessels, may give occasion to its passing again into the blood-vessels; or it may pass into these, by its being absorbed from the alimentary canal when it happens to be accumulated there in an unusual quantity. How far the latter cause can take place, or in what circumstances it does occur, I cannot clearly ascertain, and I apprehend that jaundice is seldom produced in that manner.

1818. The former cause of stopped excretion may be understood more clearly; and we have very certain proof of its being the ordinary, and indeed almost the universal cause of this disease. Upon this subject it will be obvious, that the interrupted excretion of the bile must depend upon an obstruction of the *ductus communis choledochus*; the most common cause of which is a biliary concretion formed in the gall-bladder, and from thence fallen down into the ductus communis, it being at th same time of such a size as not to pass readily through tha duct into the duodenum. This duct may likewise be obstructed by a spasmodic constriction affecting it; and such spas may happen, either in the duct itself, which we suppose to b contractile; or in the duodenum pressing the sides of the duc close together; or, lastly, the duct may be obstructed by a tumour compressing it, and that arising either in the coats of th duct itself, or in any of the neighbouring parts that are or ma come to be contiguous to it.

1819. When such obstruction happens, the secreted bil must be accumulated in the biliary ducts; and from thence i may either be absorbed and carried by the lymphatics into th blood-vessels, or it may regurgitate in the ducts themselves, an pass from them directly into the ascending cava. In either way it comes to be diffused in the mass of blood; and from thenc may pass by every exhalant vessel, and produce the disease i question.

1820. I have thus shortly explained the ordinary productio of jaundice: but it must be observed further, that it is at al times accompanied with certain other symptoms, such as whiteness of the *fæces alvinæ*, which we readily account for fro the absence of bile in the intestines; and generally also, with certain consistence of the fæces, the cause of which is not s easy to explain. The disease is always accompanied also with urine of a yellow colour, or at least with urine that tinges a linen cloth with a yellow colour. These are constantly attending symptoms; and though not always, yet there is commonly pain felt in the epigastrium, corresponding, as we suppose, t the seat of the ductus communis. This pain is often accompanied with vomiting; and even when the pain is not considerable, a vomiting sometimes occurs. In some cases, when the pain is considerable, the pulse becomes frequent, full, and hard, and some other symptoms of pyrexia appear.

1821. When the jaundice is occasioned by tumours of the eighbouring parts compressing the biliary duct, I believe the isease can very seldom be cured. That such is the cause of undice may with some probability be supposed, when it has ome on in consequence of other diseases which had subsisted ng before, and more especially such as had been attended with ymptoms of obstructed viscera. Even when the jaundice has bsisted long without any intermission, and without any pain the epigastrium, an external compression is to be suspected.

1822. In such circumstances, I consider the disease as incu-ble; and it is almost only when the disease is occasioned by iliary concretions obstructing the biliary duct, that we may ommonly expect relief, and that our art may contribute to the btaining it. Such cases may be generally known, by the isease frequently disappearing and returning again; by our nding, after the former accident, biliary concretions amongst e fæces; and by the disease being frequently accompanied ith pain of the epigastrium, and with vomitings arising from ch pain.

1823. In these cases, we know of no certain and immediate eans of expeding the passage of the biliary concretions. This generally a work of time, depending upon the gradual dilata-on of the biliary duct; and it is surprising to observe, from e size of the stones which sometimes pass through, what di-tation the duct will admit of. It proceeds, however, faster or ower upon different occasions; and therefore the jaundice, af-r a various duration, often ceases suddenly and spontaneously. is this which has given rise to the belief, that the jaundice has een cured by such a number and such a variety of different re-edies. Many of these, however, are perfectly inert, and many hers of them such as cannot be supposed to have any effect expeding the passage of a biliary concretion. I shall here, erefore, take no notice of the numerous remedies of jaundice entioned by the writers on the Materia Medica, or even of those to be found in practical authors ; but shall confine mysel to the mention of those that may with probability be suppose to favour the passage of the concretion, or remove the obstacle to it which may occur.

1824. In the treatment of this disease, it is, in the first plac to be attended to, that as the distension of the biliary duct, b a hard mass that does not easily pass through it, may excite inflammation there ; so in persons of tolerable vigour, blood-letting may be an useful precaution ; and when much pain, together with any degree of pyrexia, occurs, it becomes an absolutely necessary remedy. In some instances of jaundice accompanied with these symptoms, I have found the blood draw covered with an inflammatory crust as thick as in cases of pneumonia.

1825. There is no means of pushing forward a biliary concretion that is more probable than the action of vomiting, which, by compressing the whole abdominal viscera, and part cularly the full and distended gall-bladder and biliary vessel may contribute, sometimes gently enough, to the dilatation the biliary duct. Accordingly vomiting has often been foun useful for this purpose : but at the same time it is possible, th the force exerted in the act of vomiting may be too violen and therefore gentle vomits ought only to be employed. An either when, by the long continuance of the jaundice, it may b suspected that the size of the concretion then passing is large or more especially when pain attending the disease gives appr hension of inflammation, it may be prudent to avoid vomiti altogether.

1826. It has been usual in the jaundice to employ purgative and it is possible that the action of the intestines may excite th action of the biliary ducts, and thus favour the expulsion of th biliary concretion : but this, I think, cannot be of much effec and the attempting it by the frequent use of purgatives ma otherwise hurt the patient. For this reason, I apprehend th purgatives can never be proper, excepting when there is a slo and bound belly.

Cullen — Cullen is worthy of more than be bestowed on him [illegible] was good [illegible]

NOTES.

Proximate Cause of Fever.

Cullen was a [illegible]

The investigation of the proximate cause of fever has ever afforded an ample scope for the display of the ingenuity of medical men, and the opinions advanced concerning it involve in general the leading doctrines of the various systems of medicine which have prevailed at different times. Hence the proximate cause of fever has been attributed to heat, fermentation, expulsion of morbific matter, lentor, spasm, diminished excitement, and increased sensorial power, according to the fashionable system of the day. Although, in this change of opinion, it is easy to trace the gradual progress of medical inquiry, from the first rude observation of obvious phenomena, and the later introduction of the false analogy of other sciences, to a more just and enlightened view of the animal economy, it is however to be regretted, that the systems hitherto proposed have been constructed of such perishable materials, as scarcely to survive their authors, and stand now only as records of the waste of talent, and the futility of hypothetical reasoning in medicine. It is true, that a late very ingenious and learned author, contemplating his work with rather a poetical eye, has the boldness to assert, that he has laid the foundation of a system, which may not moulder, like the structures already erected, into the sand of which they were composed, but which may stand unimpaired like the Newtonian philosophy,—a rock, amid the waste of ages."

Dr Cullen's theory of fever, for which he had an extreme partiality, and which he has laboured with the utmost ingenuity to support, notwithstanding its general plausibility, is liable to insurmountable objections. The cold fit cannot be considered as the cause of the subsequent hot one, for they are not in proportion to each other. In quartans, the cold fit is both violent and protracted, while the hot is comparatively short; in quotidians, the reverse of this takes place. Indeed there are cases of fever on record, where the cold stage seemed to be altogether wanting. Nor is it as yet ascertained, whether the very complex and successive motions excited in fever stand in relation to each other, as cause and effect, or may be produced by the continued operation of the exciting cause. That debility is in general the first link of febrile action is undoubted, but the connection it has with the subsequent phenomena is yet unexplained; for debility in every degree may be induced by the most opposite causes without any fever supervening. It may likewise be observed, that this term debility conveys no determinate idea; and to say, that it is peculiar, (as Dr Currie expresses himself,) leaves us equally in the dark. Nothing has produced greater confusion in medical reasoning than this ambiguity of expression, arising in a great measure from too much simplifying the action of the causes which affect the body, and the unwarrantable extension of the laws of healthy action to explain the phenomena of disease. This was the radical error of Dr Brown's system.

Dr Cullen finds considerable difficulty in accommodating the increased activity of the sanguiferous system to his hypothesis, that the exciting cause of fever operates by diminishing the energy of the nervous system; and to extricate himself, has recourse to the *vis medicatrix naturæ*, to whose salutary efforts, he ascribes the subsequent reaction of the heart and arteries, by the intervention of a spasm of the extreme vessels,—*dignus vin-*

dice nodus. But this power, the admission of which (as Dr Cullen himself confesses) disturbs and perplexes all our reasoning on the animal economy, has never in this sense of the word been proved to exist; and its arbitrary introduction only explains one difficulty, by substituting a greater in its place. That the animal body possesses, to a certain extent, the power of preserving itself against noxious causes applied to it, and of exciting such actions as may remove whatever has a tendency to hurt it, no one denies; although it often happens, that this reaction, instead of proving salutary, actually constitutes the disease itself. These motions, however, are supposed to happen in conformity with the established laws of the economy; so that, from the application of stimulating substances, we expect increased action, and from sedatives, the reverse. But to suppose, that substances, whose tendency is to diminish action, sometimes indirectly increase it, merely because such action may prove salutary, is to suppose an effect without a cause, and to introduce the old exploded doctrine of the *anima medica*, whose capricious movements would confound all reasoning on these subjects. A similar mode of reasoning has been countenanced by the language of a late original physiologist, Mr John Hunter, who uses such expressions as the *stimulus of necessity*, *and of imperfection*, evidently substituting the final for the efficient cause. Indeed it is not to be expected that we should attain any sound view of the proximate cause of fever, when medical men are not yet agreed upon any pathognomonic symptom by which it may be defined, and when such is our ignorance of the various modes of morbid action, that we are forced, in most instances, to express ourselves in such vague and general terms, as are equally remote from any distinct conception, as they are from precision of language.

Animal Heat.

As the nature of this power by which animals preserve their temperature higher than that of the surrounding medium, is somewhat better understood than it was at the time Dr Cullen wrote, it will not be improper to notice briefly the chief discoveries relating to it: besides being intimately connected with some of the most important doctrines in physiology and pathology, they tend to illustrate his remarks on cold.

It had been long observed that the temperature of animals seemed to be in a great measure proportioned to the perfection of their respiratory organs. It had been likewise observed, that the blood, in its circulation through the lungs, undergoes a remarkable change: from the dark venous hue which it exhibits as it is returning to the right auricle, it assumes, in its passage through the lungs, a florid arterial colour. This was considered as indicating some corresponding change in the blood. Dr Black proved that the air expired from the lungs contained carbonic acid, as it rendered lime water turbid. He likewise remarked, that the process of respiration seemed in some respects to resemble combustion. The experiments of Lavoisier having ascertained the composition of atmospheric air, contributed still farther to enlarge our knowledge of this function; and it was ascertained, that in respiration a quantity of oxygen gas disappeared, and carbonic acid supplied its place. There is also a quantity of watery vapour expired, which was formerly supposed to arise from the direct union of the oxygen of the atmosphere with the hydrogen of the blood, but is now with much greater probability referred to evaporation from the extensive and moist surface of the bronchial vessels, where so many circumstances favour its production; and this is farther confirmed by the recent experiments of Messrs Allen and Pepys, who have ascertained that the oxygen consumed corresponds exactly with the carbonic acid evolved. The generation of animal heat is believed to depend chiefly on these changes. We are indebted to Dr Black for the important discovery, that different bodies, at equal temperatures, contain unequal quantities of caloric, which is neither proportioned to their volume nor quantities of matter; or that, besides the caloric which affects their temperature, they contain different quantities in a latent state, not sensible to the thermometer; in other words, they have different capacities for caloric. Dr Crawford, in his able and elaborate treatise on animal heat, has not only shown this difference of capacity, but ingeniously applied it to the explanation of animal temperature, and proved, from the superior capacity of oxygen to carbonic acid, that when the former unites with carbon, there must be an evolution of caloric, which therefore takes place in the lungs. But as the capacity of arterial blood is greater than venous, this heat is rendered latent, and becomes sensible in the course of the circulation, as the blood is converting into venous, and consequently its capacity diminishing. That this is the chief cause of animal temperature, is farther rendered probable by Dr Crawford, as he found much about the same quantity of heat generated from the consumption of a given quantity of oxygen by respiration, as is produced by burning the same quantity of that gas with carbonaceous matter. This fact is corroborated by similar experiments of Lavoisier. It must however be acknowledged, that in many cases of disease we do not perceive any connection betwixt the state of this function and the sudden alternations of heat and cold which take place; nor is the combination of oxygen with carbon, either in the lungs or in the course of the circulation, yet ascertained by any decisive experiment, although many circumstances render it probable.

Dr Cullen is incorrect in stating, that every temperature above 62° is found to increase the heat of the body. This error arises from taking the sensation of heat produced at the surface of the body as a general standard of its increase of temperature. In heated air there is not only less oxygen in a given volume, but the attraction of the blood for it is diminished, and the heat produced is moderated by the cooling effects of increased evaporation from the surface. Independent of these circumstances, the experiments of Dr Fordyce and Dr Crawford seem to prove that the living body possesses a power of resisting an increase of temperature. The former remained fifteen minutes in air heated to 130°, and saturated with moisture, the heat of the body being very little raised above the natural standard. As his whole body was covered with moisutre from the condensation of vapour, it is obvious that evaporation could not contribute to this effect.

Symptoms of Putrescency in the Fluids.

It has been matter of dispute, whether putrefaction ever actually takes place in the living body; and indeed there is little doubt of its being entirely incompatible with life. Dr Fordyce affirms, "that there is in life, independent of all other circumstances, a power of preventing putrefaction." But this is rather vague, as dead animal matter, which spontaneously undergoes the putrefactive process, is not, as he conceives, in exactly similar circumstances independent of life. Without having recourse to any vital energy, a satisfactory explanation is afforded from the changes which are continually going on in the body. The change which the blood is perpetually undergoing in the lungs, its continual renovation from the aliment, and from general absorption, its waste in the apposition of new matter to the solids, and expenditure in the formation of the different secretions, are sufficient to account for this difference; or, if we may be allowed to talk chemically on such a subject, exert such an influence on the order of attractions, that other affinities may predominate than those which promote putrefaction. Parmentier and Dyeux affirm, that blood drawn in the worst cases of typhus does not sooner run into putrefaction than healthy blood. Dr Lind affirms the same in scurvy. It is however of very little importance in regulating our indications of cure, whether certain symptoms of fever depend on putrescency or debility, as the same means are employed to obviate both.

On the prevention of Infectious Fevers. Extracted from Dr Haygarth's letter to Dr Percival on that subject.

" In 1777 I began to ascertain, by clinical observations, according to what law the variolous infection, and in 1780 and 1781 according to what law the febrile infection, is propagated. I found that the pernicious effects of the variolous miasms were limited to a very narrow sphere. In the open air, and in moderate cases, I discovered that the infectious distance does not exceed half a yard. Hence it is probable, that, even when the distemper is malignant, the infectious influence extends but to a few yards from the poison. I soon also discovered that the contagion of fevers was confined to a much narrower sphere. Upon these principles, I discerned the safety and wisdom of admitting fever patients into separate wards of the Chester infirmary itself, instead of an adjoining building.

" As many persons are liable to receive the typhous as the variolous contagion, and probably more, even if the persons who have had the small-pox be excluded from this comparison; and in a far greater number, if we take into consideration that the latter distemper can only be supposed once, but the former an indefinite number of times.

" In a clean, well-aired room of a moderate size, the contagious poison is so much diluted with fresh air, as very rarely to produce the distemper, even in nurses exposed to all the putrid miasms of the breath, perspiration, and other discharges. Whereas, in the close, dirty, and small rooms of the poor, the whole family in general catch the fever. On these considerations, I ventured to propose the admission of typhous fevers into the attic story, on one side of our infirmary, to be separated into two wards. From the experience of *twelve years*, I am warranted to maintain the safety of this measure, if conducted under very easy practicable regulations. During this period, it never was *suspected* that infection has been communicated to a single patient in other parts of the house.

" From the time when a person receives the infection, till the commencement of fever, the poison remains in a latent state. It is, I believe, a common opinion, that fevers frequently begin immediately after exposure to contagion, without the intervention of any latent period whatever. But out of seventy-two cases, it was not suspected, except in one single instance, that the fever began immediately from the time when the infection was caught. It appears, that out of seventy-two cases, the latent period of the typhus (allowing four days of fever before the patient becomes infectious) was less than ten days, in only five, or probably in only three cases ; that it was less than seventeen days in only eleven or thirteen ; that it fell upon some of the days between the 17th and 33d day in forty-one, which is considerably more than half the cases. On the whole, it appears, that the *latent period* of infection varies from a few days to two months.

" From a large collection, and an attentive consideration of facts relative to this distemper, have been formed the following *rules to prevent infectious fevers*.

" 1. As safety from danger entirely depends on cleanliness and fresh air, the chamber door of a patient ill of an infectious fever, especially in the habitations of the poor, should never be shut ; a window in it ought to be generally open during the day, and frequently in the night. Such regulations would be highly useful, both to the patient and nurses; but are particularly important, previous to the arrival of any visitor.

" 2. The bed curtains should never be close drawn round the patient: but only on the side next the light, so as to shade the face.

" 3. Dirty clothes, utensils, &c. should be frequently changed, immediately immersed in cold water, and washed clean when taken out of it."

" 4. All discharges from the patients should be instantly removed. The floor near the patient's bed should be rubbed clean every day with a wet mop or cloth.

" 5. The air in a sick room has at the same time a more infectious quality in some parts of it than in others. Visitors and attendants should avoid the current of the patient's breath,—the air which ascends from his body, especially if the bed curtains be removed,—and the vapour arising from all evacuations. When medical or other duties require a visitor or nurse to be placed in these situations of danger, infection may be frequently prevented by a temporary suspension of respiration.

" 6. Visitors should not go into an infectious chamber with an empty stomach: And, in doubtful circumstances, on coming out, they should blow from the nose, and spit from the mouth, any infectious poison, which may have been drawn in by the breath, and may adhere to those passages."

On the effect of Nitrous Vapour in preventing and destroying contagion. From Dr Carm. Smyth on Nitrous Fumigation.

" The various means hitherto employed for destroying contagion may be arranged under two distinct heads, viz. the physical and the chemical.

" All contagions, whether specific or putrid, are either checked or completely destroyed, by the extremes of heat and cold; and from a free exposure to air and water, are so dilute or dissolved, as to lose their noxious quality. Heat and col then, with air and water, may be looked upon as physical agents which, under certain circumstances, are effectual in blunting o destroying contagion. A degree of heat, nearly that of a oven, is found necessary for the complete destruction of contagion; but as this degree of heat is incompatible with animal life, its application is solely confined to the purifying of such clothes, furniture, &c. as cannot be injured by this treatment But, although the degree of heat requisite for the complete destruction of contagion can only be used for one particular purpose, heat and fire, judiciously managed, may, in various ways, tend to lessen the power, or to check the progress of this pernicious vapour: for as closeness and dampness are favourabl to the production and spreading of contagion, drying and rarifying the air, by counteracting these, must, so far at least, be proper antidotes. But, independent of these effects of heat, a open fire, especially where the fuel is burnt in a narrow flue, is of great benefit; for, by consuming a portion of the air, i causes a more sensible renewal of it, and, in fact, is one of the best ventilators. In employing fire and heat, however, care must be taken not to increase the heat in the apartments of the sick, as this would prove more hurtful to them than the drying or renewing of the air could be advantageous. The degree of cold necessary to destroy contagion, is probably, like the degree of heat, inconsistent with life; and, therefore, although we hear of contagion having been checked or suppressed by cold, there are few instances, if any, of its being completely destroyed.

" That noxious vapours are hurtful only when concentrated, and are harmless when diffused, are facts or data universally admitted; and it is upon this principle, that clothes, bedding, or other matters to which contagion adheres, are purified, or lose their deleterious quality, by exposure for a sufficient length of time to the open air, or to a current of water; but as th ne requisite for this mode of purification is uncertain, and as ntagious clothes, goods, &c. cannot always be exposed in a oper manner, we are commonly under the necessity of having course to those more expeditious means of purification which emistry affords.

" The mineral acids, particularly when in a state of vapour, ith the different gases or permanently elastic fluids produced them, are probably, excepting fire, the most powerful agents nature. The volatile vitriolic or sulphureous acid, the only ne hitherto made use of, proves effectual in destroying contaion; although, owing to its deleterious quality, it cannot be nployed, except in situations from which people can be reoved.

" I can safely affirm, that the nitrous acid may be employed very great quantity without risk, and even without the nallest inconvenience; and that it is effectual for the destroyng of contagion, I have every reason to believe, not only from nalogy, but from experience.

" The most highly contagious fevers that occur in our hositals do not affect the patients in general lodged in the same ard, but only the nurses or those patients who assist them, or hose who lie in beds contiguous to the sick: to such persons I ave frequently seen the fever communicated, and have also reeatedly prevented the farther spreading of the disease, by plaing gallipots, with the fuming nitrous acid, between the bed f the sick, and of those who were not yet affected by the conagion. And, in private practice, I can declare with truth, that here the nitrous acid has been constantly used as a fumigaion, I have not known an instance of a contagious fever haing been communicated, even to a nurse or an attendant.

" The well-known efficacy of sulphureous acid, in destroyng contagion, is a sufficient reason for our continuing to use it s a fumigation for clothes, furniture, &c.

" The nitrous acid, being attended with no risk or inconveience to the respiration, and appearing, from our experience, of sufficient efficacy to prevent the farther spreading of cont gion, seems the proper antidote to be applied, in all situatio where persons are necessarily present.

“ For purifying empty hospital or prison wards and ships, should also prefer the nitrous acid to the sulphureous ; as I b lieve it to be equally efficacious ; its vapour is more volatile ar penetrating ; and it does not leave the disagreeable smell whic sulphur does.

“ Since writing the above, I have had the pleasure of seein the latest improvements of the French chemists on the subje of contagion. The French physicians, instructed by that exce lent chemist Monsieur De Morveau, have lately made trial the marine acid in their hospitals, and have found it equal effectual in destroying contagion as the sulphureous, and, as being more volatile, perhaps even preferable for the purpose purifying hospital wards. They also remarked, that, in a small proportion, it may be safely used in hospital wards, even whe people are present.

“ To obtain the nitrous or marine acid in a state of vapou the method is extremely simple. It consists in decomposin nitre, or common salt, by means of heated vitriolic acid, as fo lows : Put half an ounce of vitriolic acid into a crucible, or ir to a glass or china cup or deep saucer ; warm this over lamp, or in heated sand, adding to it from time to time som nitre or common salt : these vessels should be placed at twent or thirty feet distant from each other, according to the heigh of the cieling, or virulence of the contagion. In hospitals o prisons, the lamps or vessels containing heated sand may b placed on the floor ; on board of ships, it will be better to han them to the cieling by means of waxed silk cords.

“ As fumigating with nitrous acid is attended with no inconvenience, and as the process is so simple, and the material so cheap, it should, as a means of prevention, be employed fo some hours every day in transports having troops on board and in crowded hospitals ; and if there is any appearance o ontagion, the vapour confined for several hours at a time. umigating vessels, or lamps, should also be placed contiguous o the hammocks or beds of persons affected with any contagi-us or putrid distemper, whether fever or dysentery. By taking uch precautions, a great deal of mischief would probably be revented, and a stop put, in the beginning, to one of the most atal calamities that ever afflicted mankind."

Affusion of Cold Water in Continued Fever.

The circumstances which regulate the application of cold, nd the great value of this remedy in fever, have now been retty well ascertained, and may be justly considered one of the ost memorable improvements of medicine in modern times. r William Wright, physician to the forces late in the West ndies, transmitted to the London Medical Journal, in the years 786, an account of several cases of fever which he had suc-essfully treated by the affusion of cold water.

Dr Currie, in a work which reflects on him the highest cre-it, has prosecuted this subject with equal ability and success. he following extracts, from his Medical Reports, give the re-ult of his experience on the affusion of cold water, on cold rink, the affusion of tepid water, and sponging the body in ontinued fever.

"The safest and most advantageous time for using the as-ersion or affusion of cold water, is when the exacerbation is at s height, or immediately after its declination is begun; and his has led me almost always to direct it to be employed from ix to nine in the evening; but it may be safely used at any ime of the day, *when there is no sense of chilliness present, when he heat of the surface is steadily above what is natural, and hen there is no general or profuse sensible perspiration.* These articulars are of the utmost importance."

"If the affusion of cold water on the surface of the body b used during the cold stage of the paroxysm of fever, the respiration is nearly suspended; the pulse becomes fluttering, feeble and of an incalculable frequency; the surface and extremitie become doubly cold and shrivelled, and the patient seems t struggle with the pangs of instant dissolution."—"This remed should therefore never be used when any considerable sense o chilliness is present, even although the thermometer applied t the trunk of the body should indicate a degree of heat greate than usual.

"Neither ought it to be used, when the heat measured by th thermometer is less than, or even only equal to the natura heat, though the patient should feel no degree of chilliness This is sometimes the case towards the last stages of fever, whe the powers of life are too weak to sustain so powerful a stimulus.

"It is also necessary to abstain from the use of this remedy when the body is under profuse sensible perspiration, and thi caution is more important in proportion to the continuance o this perspiration. In the commencement of sweating, especially if it has been brought on by violent exercise, the affusion o cold water on the naked body, or even immersion in the col bath, may be hazarded with little risk, and sometimes may b resorted to with great benefit. After the sweating has continued some time, and flowed freely, especially if the body ha remained at rest, either the affusion or the immersion is attende with danger, even though the heat of the body at the momen of using it be greater than natural. Sweating is always a cooling process in itself, but in bed it is often prolonged by artificial means, and the body is prevented from cooling under it t the natural degree by the load of heated bed clothes. Whe the heat has been thus artificially kept up, a practitioner, judging by the information of his thermometer only, may be le into error. In this situation, however, I have observed tha the heat sinks rapidly on the exposure of the surface of the boy even to the external air, and that the application of cold wa- r, either by affusion or immersion, is accompanied by a loss f heat, and a deficiency of reaction, which are altogether in- onsistent with safety."—" The presence of severe diarrhœa, or ysentery, seems to forbid the use of the cold affusion, or at ast to render its advantages uncertain.

" Under these restrictions the cold affusion may be used at ny period of fever, but its effects will be more salutary in pro- ortion as it is used more early. When employed in the ad- anced stages of fever, where the heat is reduced, and the debi- ty great, some cordial should be given immediately after it, nd the best is warm wine."—" Used in the three first days of ever, the cold affusion very generally stops the disease; the same appy effects sometimes follow its use on the fourth or even fth day, but seldom later: even in the subsequent stages, vhere the heat continues preternaturally great, and the skin ry, it is of great and manifest advantage, almost immediately elieving the most distressing symptoms, particularly restlessness nd delirium, and conducting the disease to a safe and speedier ssue."

" At first I used fresh water, afterwards fresh water mixed vith vinegar, and lastly a saturated solution of sea salt in wa- er. Salt water, either for the purpose of immersion or affu- ion, is more grateful to the patient than fresh water, and it is vell known that it may be applied to the surface for a length of ime with much less hazard. Persons immersed in sea water, nd especially in saturated brine, for some time together, pre- erve the lustre of the eye and the redness of the cheek, long- r than those in fresh water of an equal temperature, and uch persons exhibit the vital reaction stronger, when removed rom it. I preferred the brine to vinegar, as being cheaper, nd more easily procured of the necessary quality: otherwise, t is well known how grateful vinegar is to patients in fever, and perhaps a mixture of vinegar and water of the proper strength might be preferable even to brine. But though I gave the preference of brine over fresh water, I have very often used the latter, and it is seldom that any danger can result from the want of a saline impregnation, where the cold is employed in so stimulating a form as that which has been described; that is, suddenly, and for so temporary a duration."

"We may safely adopt the same general rules for the use of cold water in fevers as a drink, that have already been laid down for its external application."—"Its effects are similar in kind though different in degree. When I have used the affusion of cold water, I have seldom found it necessary to employ it largely as a drink, and my experience of its effects when drunk in large quantities, has been chiefly confined to those cases where the fears or prejudices of the patient, or their friends, have prevented our having recourse to the more powerful method of affusion. For, however burning the thirst may be, it is speedily abated, and even removed, with very little drink."

"I apply the term *tepid* to water heated to that degree which is warm, but not hot to the sensations, and which in the way of affusion is from 87 to 97 of the scale of Fahrenheit. At first, I imagined that the tepid affusion might be beneficial in cases where the heat of the body is below the degree necessary to render the cold affusion safe. A little experience, however, convinced me that this practice required strict attention; for I found, that in many cases, at least, the heat of the living body is lowered as speedily by the affusion of tepid water, as by the affusion of water that is cold: If I mistake not, in some cases the heat is lowered more speedily by the tepid water. The evaporation from the surface is more copious from the tepid affusion, and on this the cooling of the body very much depends. But this is not all; the tepid affusion is little if at all stimulating and does not, like the cold affusion, rouse the system to those actions by which heat is evolved, and the effects of externa cold are resisted. Where the object is to diminish heat, that may be attained with great certainty by the repeated use of the tepid affusion, suffering the surface of the body to be exposed n the interval to the external air; and if the beams of the sun re excluded, and a stream of wind blows over it, the heat may hus be reduced where cold water cannot be procured, even in he warmest regions of the earth. I have accordingly employed he tepid affusion very generally in those feverish affections vhere the morbid actions are weakly associated, depending raher on the stimulus of preternatural heat, than on contagion, niasmata, the morbid contents of the stomach and bowels, or ocal inflammatory affection. Of this kind are a great part of the diseases of children, in which the tepid affusion is a valuable remedy. It very generally produces a considerable diminution of heat, a diminished frequency of the pulse and respiration, and a tendency to repose and sleep. I have used it also in feverish disorders of various kinds where the lungs are oppressed, and the respiration laborious, and where of course the oppression might be dangerously augmented by the sudden stimulus of the cold affusion. It is also applicable to every case of fever in which the cold affusion is recommended; and those may receive much benefit from it, whose fears or whose feebleness deter them from that energetic remedy. I have not however found its effects so permanent as those of the cold affusion, and I have never seen it followed by the total cessation of regular fever. In the hectic fever, however, where the actions are less strongly associated than in synochus or typhus, the paroxysm is sometimes completely extinguished by the affusion of tepid water on the commencement of the hot stage. By moistening the palms of the hands and the soles of the feet with vinegar, its effects may be moderated; for it is from the sensation of heat in the extremities, that the stimulus to the system is chiefly derived; and this practice ought not to be neglected, if the tepid affusion is not employed generally. In all cases of fever, indeed, where the burning heat of the palms of the hands and soles of the feet is present, this method of cooling them should be resorted to; it is uniformly safe and refreshing."

"When the affusion of water, cold or tepid, is not employed in fever, benefit may be derived, as has already been mentioned, though in an inferior degree, from spunging or wetting the body with cold or warm vinegar or water. This application is however to be regulated like the others, by the actual state of the patient's heat, and of his sensations. According to my experience, it is not only less effectual, but in many cases less safe: for the system will often bear a sudden, a general and a stimulating application of cold, when it shrinks from its slow and successive application."

"I have also used the affusion of *cool* water as a remedy in febrile diseases, but more frequently in paralysis, and in other diseases of debility. By the term cool, I indicate the temperature from 87° to 75°. It operates as a gentle stimulant, and may be used as a milder form of the cold affusion: like the cold affusion its application should be sudden and momentary, when the object is to increase the tone of the system, or to dissolve a morbid catenation; where it is employed to moderate inordinate heat, it may be used more slowly, providing it does not interrupt the catenation on which respiration depends."

Effects of Purgatives in Typhus.

Dr Hamilton, in a late interesting publication, has proposed a much more free and decided use of purgatives than was formerly employed, and has likewise extended their administration, with manifest advantage, to several diseases in which they were thought either injurious or doubtful. The following extracts give the result of his experience of the benefit derived from them in typhus.

"I was appointed physician to the Royal Infirmary upwards of thirty years ago. At this time the cure of typhus was thought to consist chiefly in the removal of atony and spasm of the extreme vessels of the surface of the body. For this purpose, together with other medicines, weak antimonials were given freely. An emetic and a purgative medicine were commonly exhibited on the first approach of the attack, but the state of the stomach and bowels was little regarded in the after periods of fever. An alvine evacuation was occasionally procured by a mild glyster, while purgatives were given with extreme diffidence, lest by their operation they should rivet the spasm of the extreme vessels, and increase debility, one of the supposed direct causes of death in fever. These apprehensions may still bias the practice of many, as they certainly did bias mine for a long time.

" A typhus fever, with symptoms more than usually malignant, appeared in Edinburgh in summer 1779. Having been often disappointed in promoting the cure of this fever by means of mild antimonials, which were then so much in use, I was induced, by the same views which directed the employment of these, to use the *calx antimonii nitrata*, Ph. Edin. editæ anno 1774. This antimonial remedy was not ineffectual; but I remarked that it was beneficial only when it moved the belly. In this case the fæces were black and fœtid, and generally copious. On the discharge of these, the low delirium, tremor, floccitatio, and subsultus tendinum which had prevailed, were abated; the tongue, which had been dry and furred, became moister and cleaner, and a feeble creeping pulse acquired a firmer beat.

" On reflecting afterwards on these circumstances, it appeared to me to be probable, that, as the purgative effect of the calx antimonii nitrata had been the useful one, any purgative medicine might be substituted for it, and that, by this substitution, the unnecessary debilitation of an exhausted patient by sweating and vomiting would be avoided.

" More extended experience confirmed these conjectures; and I was gradually encouraged to give purgative medicines during the course of typhus, from the commencement to the termination of the disease.

" I have directed a strict attention to this practice for a long time, and I am now thoroughly persuaded, that the full and regular evacuation of the bowels relieves the oppression of the stomach, clears the loaded and parched tongue, and mitigates thirst, restlessness and heat of surface; and that thus the later and more formidable impression on the nervous system is prevented, recovery more certainly and speedily promoted, and the danger of relapsing into the fever much diminished. I am disposed to refer the superior utility of purgative medicines in typhus fever to the circumstance of their operating throughout the whole extent of the intestinal canal; to their acting upon an organ, the healthy functions of which are essential to recovery, in a manner that is consonant to the course of nature, by propelling its contents from above downwards; and to their moving, and completely evacuating the feculent matter which, in this case, becomes offensive and irritating. Constipation, together with the change which fever appears to produce in the fluids secreted into the intestines, seems to be the cause of this alteration in the state of the fæces. The necessity of expelling therefore this noxious mass is therefore apparent; and if my opinion be correct, the operation of a glyster, the stimulus of which is confined to the rectum, must be altogether inadequate to procure the full evacuation which the circumstances of the case require. Accordingly, it is now some years since I have relinquished almost entirely the use of emetics and glysters in fever. I trust to a purgative medicine to insure a regular alvine evacuation, although the daily exhibition of a purgative for this purpose is not always required. By this mode of treatment, I avoid the harassing distress which the operation of an emetic occasions, as well as the trouble and fatigue which accompany the exhibition of glysters.

"This practice, by means of purgative medicines, does not supersede other remedies employed to fulfil other indications, particularly the free access to pure and fresh air. I am even ready to allow, that although I exclude emetics and glysters from my general practice in typhus fever, yet particular circumstances may arise to make both the one and the other necessary.

" I cannot, however, avoid remarking, that for many years past, I have found these other remedies, and wine in particular, to be less necessary than I formerly thought. This may be owing in part to typhus fever being less malignant than it was some time ago, and in part to the purgative medicines, which I employed with freedom, removing and obviating symptoms of debility. If this be a just view of the case, the plain inference is, that while purgative medicines preserve a regular state of the body, they do not aggravate the debilitating effects of fever.

" This doctrine is at variance with that which is commonly entertained; but I am confident that it is consonant to the fact. The complete and regular evacuation of the bowels, in the course of fever, is the object to be obtained. Within this limit I have had much satisfaction in prosecuting the practice; nor have I, in a single instance, had occasion to regret any injury proceeding from it, for I am not an advocate for exciting unusual secretion into the cavity of the intestines, and for procuring copious watery stools: these, while they are not necessary, might increase the debility so much dreaded.

" In most instances of fever, this practice, by purgatives, is conducted with ease, and a tolerable degree of certainty. The observation and experience of individuals may be necessary, on some occasions, for directing measures where it is not easy to lay down precise rules. The effect of purgative medicines may not be foreseen in every instance, or be altogether immediately under command; at any rate, however, the subsequent doses of purgatives, and the frequency of their repetition, will be regulated by the operation of preceding ones.

" It is of importance to consult in all respects the ease and comfort of patients in fever. The exhibition of purgatives, therefore, should be so timed, that their effects may be expected during the day, when proper assistance can be best procured for the sick.

" The purgative medicines which I have chiefly used in fever are, calomel, calomel and jalap, compound powder of jalap, aloes, solutions of any of the mild neutral salts, infusions of senna, and sometimes the two last conjoined.

"My experience in the treatment of typhus enables me to draw the following conclusions.

"1st, Purgative medicines are given with safety in typhus to evacuate the contents of the bowels.

"2d, Under this limitation they may and ought to be exhibited at any period from the commencement to the termination of the fever.

"3d, Under the same limitation, no circumstance, or symptom, in the course of typhus, contra-indicates the exhibition of purgative medicines.

"4th, The early exhibition of purgatives relieves the first symptoms, prevents the accession of more formidable ones, and thus cuts short the disease.

"5th, In the advanced period of typhus gravior, symptoms that indicated the greatest danger were relieved by the evacuation of the bowels, and the patients, in this instance, recovered.

"6th, Reconvalescence from typhus is greatly promoted and confirmed, by the preservation of a regular state of the body. The same means secure against the danger of a relapse."

Administration of Opium in Continued Fever. From Dr Currie's Reports.

"The sedative effects of opium are often counteracted by the stimulus of heat on the surface and extremities, and the actual heat of the patient is a circumstance requiring particular attention in the administration of this powerful remedy.

"When opium is given in fever, if the heat be two or three degrees or upwards above the natural standard, and the skin dry, it seems very generally to increase the heat and restlessness. There are exceptions; if the heat, though preternaturally great, is subsiding, and the skin beginning to soften, though not yet noist, opium very often accelerates the perspiration, and by this neans diminishes the heat. In such cases its salutary effects, ranquillity and sleep, generally follow. Thus it will happen, hat an anodyne draught given early in the evening shall occasion increased heat and agitation, which, if deferred till two or hree in the morning, would have produced sensible perspiraion and repose. In the evening the exacerbation of fever is on he increase, or at its height, which towards morning is subsiding; the difference in the actual heat of the surface being often not less than two degrees or upwards. In continued fever, where the heat is great, and the skin dry, it is proper to lower the temperature of the surface, and if possible to excite sensible perspiration before opium is administered, if we wish to insure its diaphoretic and soporific effects. But even after opium has been exhibited, when inordinate heat prevents its sedative operation, it will be found safe and salutary to use the tepid or cold affusion; and when the heat is by this means reduced, repose and sleep will follow. Tepid or cold drink will produce, though in a weaker degree, similar effects. These methods of promoting the diaphoretic effects of opium seem more certain and advantageous in fever, than the practice of combining it with ipecacuanha, or the preparations of antimony; but where opium is to be used in inflammatory diseases, or in dysentery, doubtless this last method is to be preferred."

Effects of Opium in Intermitting Fevers. From Dr Lind on Hot Climates.

"I have prescribed an opiate to upwards of three hundred patients labouring under this disease. I observed, that when given during the intermission, it had not any effect, either in preventing or mitigating the succeeding fit; when given in the cold fit, it once or twice seemed to remove it; when given half an hour after the commencement of the hot fit, it generally gave relief. The effects of opium given in the hot fit of an intermitting fever, are, 1st, It shortens and abates the fit; and this with more certainty than an ounce of bark is found to remove the disease. 2dly, It generally gives a sensible relief to the head, takes off the burning heat of the fever, and occasions a profuse sweat: this sweat is attended with an agreeable softness of the skin, instead of the disagreeable burning sensation which usually affects patients sweating in the hot fit, and is more copious than in those who are not under the influence of opium. 3dly, It often produces a soft and refreshing sleep to patients before harassed with the fever, from which they awake bathed in sweat, and in a great measure free from complaint.

" I have always observed, that the effects of opium are more uniform and constant in intermitting fevers than in most other diseases, and are then more quick and sensible than those of other medicines. An opiate thus given soon after the commencement of the hot fit, by abating the violence, and lessening the duration of the fever, preserves the constitution in a great measure uninjured. Since I have used opium in agues, a dropsy or jaundice has seldom attacked any of my patients in these diseases. In cases where opium did not immediately abate the symptoms of the fever, it never augmented their violence. On the contrary, most patients reaped some benefit from an opiate given in the hot fit; and many of them bore a larger dose of opium at that time than at any other. Even a delirium in the hot fit is not increased by opium, though opium will not remove it. If the patient be delirious in the fit, the administration of the opiate ought to be delayed till he recover his senses; an opiate will then be found to relieve the weakness and faintness which commonly succeed the delirium.

" Opium seems also, in this disease, to be a good preparative for the bark, as it not only produces a complete intermission, in which case alone the remedy can with safety be administered, but occasions so salutary and profuse an evacuation by sweat, as frequently to render a less quantity of the bark requisite.

"The opiate was generally given in about two ounces of tinctura sacra (vinum aloeticum) when the patient was costive, and was to take the bark immediately after the fit; thus at the same time shortening the fit, and cleansing the intestines, previous to the administration of the bark. The operation of the tinctura sacra is not prevented, though somewhat retarded by the opiate. When a vomit is given just before the fit, the administration of the opiate after it should be postponed until the hot fit is begun."

On the Administration of Wine in Fevers. From Dr Moore's Medical Sketches.

"In the last century, and that immediately preceding it, the minds of mankind seem to have been obscured with ideas equally gloomy in religion and in medicine; every thing pleasing was thought sinful; and by many enthusiasts, what gives the highest pleasure was considered as the greatest sin. The physicians seem to have adopted the prevailing sentiment of the times, and to have applied it to the practice of physic: they condemned every thing that was agreeable to a sick person's taste or feelings, and declared it noxious to his constitution, and the more noxious in proportion as it was agreeable. In many instances they treated their patients as if they had been persuaded that the most effectual way to restore health was to prescribe what was most repugnant to his taste. If he complained of heat, additional bed-clothes were heaped upon him to force a sweat; if half stifled, he begged for a little fresh air, the bed-curtains were drawn closer, because cold ought to be most guarded against when the body is hottest; and if he complained of thirst, and entreated for a draught of cool water, he was presented with a draught from the apothecary's shop, well impregnated with spiceries. How many fevers would have terminated favourably, had the pleadings of nature been listened to, and the wishes of the patient gratified; which, by this horrid treatment, have degenerated into petechial malignity! How many victims, since the period above alluded to, have been sacrificed to the pride and obstinacy of mistaken science, dazzled by the meteors of theory, and despising the humble path of experience pointed out by the earliest physicians. The prejudices in favour of sudorifics, and the hot regimen in fevers, is now however pretty much removed: irresistible experiment obliges the haughtiest Doctor to acknowledge, that the best way of cooling a human body heated by fever is that which cools every other hot body, and would naturally occur to the most untutored mind, which *proud science never taught to stray*, namely, the admission of a cool atmosphere. It seems equally obvious, that the most effectual way of allaying intense thirst is abundant drinking of quenching liquids; and that the proper aliment for a feverish and capricious stomach is not that which it loaths, as it does every kind and every preparation of animal food, but that which it longs for, which is the case with almost all sorts of mild, juicy, ripe fruit: these spread a refreshing moisture over the parched tongue and throat of the languid patient, moderate the ardour of the thirst, dilute and cool the heat of his juices, promote urine, and tend to keep the belly open. The last is a point of great importance to this fever, where we often find such a tendency to new accumulations in the intestines as soon as the old are removed, or if bilious, redundancy to the gall-bladder and its ducts.

" It is not uncommon in the practice of medicine, for physicians to follow the same plan on different, or perhaps opposite principles. Thus one may recommend ripe fruit, vegetable juices, and acidulated drinks in this fever, with a view to correct the putrid tendency of the humours. Another, who knows it is impossible for these fruits and drinks to correct what he thinks does not exist, may still prescribe them with a view to eir deterging the excretory vessels, by their sudorific and diu-etic qualities ; and each may be confirmed in his supposition, y the benefit the patient receives from the prescription. Some eople may doubt either supposition, but nobody can doubt e agreeable and refreshing effects of such fruits and juices, n the parched, thirsty, and languid patient. Sometimes ripe uits, particularly strawberries and wine, are the only nourish-ent he will take : which circumstance of itself forms a pre-umption, that they are the properest for him. At other times, hen he refuses panada, sago, rice, when prepared without ine, he will take them in considerable quantity mixed with ine and sugar; and when he takes such nourishment with ny degree of relish, they seldom fail of being beneficial. They nable him to bear the open air and a free ventilation for a nger time, which always tends to hasten his recovery.

" When that prostration of strength, so often mentioned, su-ervenes, and is followed by stupor, low delirium, twitchings of e tendons, and other symptoms ; however proper we may think e bark would be, and however eager we are to give it, is is no longer in our power. In this state the patient general- rejects it in all its forms, or will only take it in such small uantity as can be of no service. Yet the case is not entirely opeless ; for even in this situation, if the lips are moistened ith a little warm wine, sweetened with sugar, he will shew a elish for it, and when given in spoonfuls will suck it into his outh with signs of satisfaction, after rejecting every medi-ine with disgust, and refusing every other kind of nourish-ent whatever. I have known instances where the physician, ot being convinced that the filling of the pulse and removal of elirium was owing to the wine, has set aside the use of it, ill the return of the bad symptoms obliged him to resume it. t is generally necessary, in such cases, to begin by giving the ine warm with sugar, to induce the patient to take three or our spoonfuls ; but afterwards he takes it freely cold, and ithout sugar. The reader might be astonished were I to mention the quantity of wine I have known some patients take i this fever, and in some cases of the confluent small pox, wher the weakness, insensibility, and other symptoms were the same and where the recovery of the patient was evidently owing t that cordial alone. The proper rule is to give the wine till th pulse fills, the delirium abates, and a greater degree of warmt returns to the extremities. Upon the smallest appearance o the stupor coming back, the pulse quickening and sinking, fo they all go together, the wine must be resumed. Attentively ob serving this rule, I have often known patients, who in healt were not fond of wine, and who would have been intoxicate with a single bottle, drink in the space of twenty-four hour two bottles of claret, without any other effect but that c strengthening the pulse, abating the delirium, removing th tremor, and creating a moderate warmth on the skin. In c thers I have known a much greater quantity necessary to pro duce the same effect; but by giving that greater quantity th same effect was produced. I refrain from mentioning the ex act quantity of wine which I have known some particular pa tients take, with the best effects, in this fever. It is sufficie to say, that it ought to be given in such quantity as the patie will willingly take, till the effects above mentioned are pr duced, and then stop; but on the first appearance of the pul becoming weaker, or any other symptoms returning, mo wine must be given, persevering in that quantity which found, by attentive observation, sufficient to keep up the pul and ward off the other bad symptoms.

“ When that quantity has been continued for several day it may be gradually diminished; a little bread soaked in th wine, or some other simple nourishment, may be offered. Aft the patient is able to take panada mixed with wine, or bre soaked in it with any degree of relish, the appetite sometim becomes very keen, and he is even willing to take more panad rice, or sago mixed with wine than is proper for him. Th return of appetite is undoubtedly one of the strongest indic tions of returning health; but it must be indulged with caution; the patient must be allowed to eat but little at a time, even of this kind of nourishment, and to return very gradually to his usual food.

" Soon after the fever is entirely removed, and long before the patient has recovered his strength, he will, by proper management, be entirely weaned from the wine, or his allowance may be reduced to two or three glasses in a day, if the physician should think that quantity more proper than none. Indeed, the third part of what formerly had proved a salutary cordial and a restorative, would, in this state of convalescence, occasion a dangerous intoxication. So great a difference is there in the effect of this cordial upon the constitution, in this state of extreme weakness, when all the natural functions seem loaded and clogged by disease, from what it has in perfect health, or when the fever being just removed, the animal functions gradually resume their former course. Claret is the wine I have generally recommended when the circumstances of the patient could afford it. I have seen the same good effects, however, from the use of port, madeira, and other wines; and when no kind of wine is to be had, brandy or rum diluted with water or milk, and sweetened with sugar, must be substituted in its place. In the state of stupor, debility, and low delirium, already described, spirits diluted have nearly the same effect with wine, and are even more relished by a certain class of patients."

On the exhibition of Cinchona in Tertian Intermittents. From Dr Fordyce's second Dissertation on Fever.

" It is certain, that the powder is much more efficacious in preventing the returns of the paroxysms of tertians than any other preparation of this bark. It should be reduced to as fine a powder as possible, both because the fine powder is more efficacious, and because it may be exhibited without producing nausea. The powder has been objected to, on account of its disagreeing with the stomach, and other forms have been recurred to as more agreeable to it, and to the taste. The taste of bark is less disagreeable than that of many other medicines, and provided it be reduced to a powder sufficiently fine, so as not to be felt gritty between the tongue and the palate, less objection is generally made to it in this state than in any other form. The greatest difficulty has arisen from practitioners themselves, who have suggested that it was unpleasant.

" By what operation, or in what manner the bark of cinchona prevents the return of intermittent fevers, is an interesting subject of inquiry. To determine this question, the author has exhibited it to a man in health, to the quantity of an ounce in twenty-four hours, which is sufficient in many instances to prevent the return of a regular tertian, without any apparent difference taken place in the system. This medicine, therefore produces no apparent effect in a man in health.

" The bark of the cinchona, and probably all the medicines that act in a similar manner, have no power of taking off a fever when present, but only a power of preventing the return or if they have any action on a fever when present, they tend to prolong it, and prevent a perfect crisis from taking place.

" There appears no doubt but that the effects of the cinchona are produced by the impression it makes on the stomach The length of time the impression remains in preventing th return of the paroxysm of fever has been proved to be considerable, by the experiments made by many physicians. Th author has tried it in several regular quartans where the intermissions lasted sixty hours, and the intermissions were perfect a drachm of the cinchona given every hour for sixteen hours at the beginning of the intermission, and discontinued for th last forty-four hours, has prevented in several cases the retur of the fever. From this it is evident, that the impression mad y the bark on the stomach lasts at least forty-two hours. A ose of bark, therefore, exhibited at the beginning of the inermission of a regular tertian, will have such an effect as to end to prevent its return. This medicine consequently should e exhibited during the whole time of the intermissions, as the mpression made by every dose will have an effect in preventing he return of the paroxysm.

"The author has been led to conclude from many observaions, that if the cinchona be exhibited in such a manner as not o prevent the return of the paroxysms in the course of a few ntermissions, that its effect is generally lost, and that it never an be exhibited afterwards in any dose, or in any manner so s to produce its effect in the manner it would have done if mployed in a proper dose and mode from the first. Frequenty its power of preventing the return of the paroxysm is totally ost, and therefore it is of the utmost importance to use it at he beginning in such preparations and quantities as to be efectual.

"When the irregularity of the intermissions renders the use of the cinchona improper, they may be rendered much more perfect by keeping the primæ viæ in proper order, by means of emetics and laxatives, and by producing more perfect crises by preparations of antimony, &c. By these means intermissions are frequently rendered nearly perfect after two or three paroxysms, that would have remained as many weeks imperfect without them; besides, there is a chance in this case of removing the disease entirely by these remedies.

"When it is proper to employ the cinchona in tertians, a drachm of the bark of it, reduced into very fine powder, should be exhibited, and repeated every two hours at least. Most stomachs will bear this dose; if it will bear a larger, two drachms at the end of every four hours would be preferable. This exhibition of the cinchona should not be interrupted during the intermission; therefore, if the patient falls asleep, he should be awakened at the proper time for taking it. The cinchona should be continued till within an hour of the time of the coming on of the next paroxysm. Should no appearance of the disease arise, it is to be omitted during the time that the next paroxysm should have taken up; for if this remedy has had sufficient efficacy during the time of one intermission to prevent the return of the next paroxysm, it will certainly, during the term of the following intermission, have power to prevent the subsequent paroxysm. In a regular tertian this always is true. Although a paroxysm of an intermittent has been prevented by the cinchona, it frequently happens, that, if no medicines be employed, some slight appearances of a paroxysm will take place about the time the disease should have recurred. These symptoms, for the three or four times that would have been the times of the paroxysms, and at length a complete paroxysm recurs, and the disease proceeds as if it had never been prevented. Several means have been employed to prevent this reproduction of the disease. The first and most efficacious is to continue the use of the cinchona, by employing it in the same dose as at first, at the time that would have been the time of the intermission after the paroxysm that was prevented by it, employing it as frequently as during the time of the first intermission. It should be discontinued at the time when the subsequent paroxysm should have recurred; and the same practice should be repeated during the time of the next intermission.

" If the bark should affect the intestines as a purgative, it is a common and proper practice to exhibit opium to prevent this effect. A third part of a grain or its equivalent, in any of its preparations, should be given and repeated at the end of every sixth hour; it may be mixed with the dose of bark which falls in with that period.

" When, on the other hand, the peristaltic motion of the intestines is prevented from going on, the natural evacuations ought to be produced by rhubarb, or some other gentle laxative, as purgatives ought by no means to be exhibited so as to make large evacuations,

Use of Arsenic in Intermittents.

Various metallic preparations, as the oxide of zinc, sulphate of zinc, mercury, &c. have been extolled as remedies of intermittent fever. These, however, have now fallen into general disrepute.

The oxide of arsenic (some chemists rather consider it to be an acid) is the only metallic substance which claims distinct notice. It is a most powerful remedy in this disease; and, were it not for the deleterious consequences with which it is sometimes attended, would perhaps claim a preference to the bark itself. The ague drop, which empirics formerly converted so much to their emolument, and which of course they have so much abused in treating this disease, is indebted to arsenic for all its virtues.

Dr Fowler, in his Reports on the use of arsenic, has the merit of having ascertained the limitations under which it ought to be prescribed, and of having fully established its efficacy in curing intermittent fevers. He prepares it in the following manner: 64 grains of the oxide of arsenic are reduced to a fine powder, and mixed with an equal quantity of potash, which is added to half a pound of distilled water in a Florence flask, and placed in a sand heat, where it is gently boiled till the arsenic is completely dissolved; to this solution, when cold, half an ounce of compound spirit of lavender is added, and as much distilled water as makes the whole amount to a pound. A grain of the arsenic is contained in one hundred and sixty drops, or two drachms of the solution; and one grain and three-fourths of a grain will in general radically cure the ague. The dose from two to seven years of age is from two to seven drops; from eight to eighteen years and upwards, is from seven to twelve drops three times a-day. In cases of ague, the preceding doses, according to the age of the patient, are to be administered three times a-day for five days; at the end of which, the fits being suspended, the use of the medicine is to be omitted for two or three days, and then repeated three days more in order to prevent a relapse. The medicine, when ordered three times a-day, is to be taken at six o'clock in the morning, two o'clock, and ten; and when twice a-day, at ten in the morning and ten in the evening; and these hours are to be adhered to, whether they coincide with the paroxysm or not. Dr Fowler draws the following conclusions, from an extensive experience of the benefits derived from this medicine.

" 1*st*, That this mineral solution is an efficacious and valuable remedy in the cure of agues.

" 2*d*, That in proportion to the number of cases in which it has been tried, it appears to be equally successful in remitting fevers, and in periodical headachs.

" 3*d*, That being tasteless, it may often be conveniently and successively exhibited to children, and certain adults, who cannot be prevailed upon to take the peruvian bark, from its bitterness, or other medicinal qualities.

" 4*th*, That from its general efficacy, it is highly probable it will prove successful in most cases wherein the peruvian bark shall fail in producing its usual effects.

" 5*th*, That although its curative virtue will be obvious in almost every case of ague, the paroxysms, in a number of instances, will only be relieved, or suspended for a certain time.

" 6*th*, That a very frequent cause of the failure of the medicine is owing to its operative effects proving troublesome, and thereby not permitting a regular course of its administration.

" 7*th*, That the operation of the medicine on the bowels as a cause of failure, may frequently be obviated by the assistance of small doses of liquid laudanum."

Although several respectable practitioners have corroborated Dr Fowler's report of the virtues of this medicine, there are some considerations which show that it should not be employed without the utmost caution, and perhaps only where other medicines more safe in their operation have proved unsuccessful its use, particularly if continued for any length of time, has sometimes occasioned excessive vomiting, severe griping, wasting, headachs, tremors, &c. It is also, like digitalis and mercury, apt to be accumulated in the body, and to produce alarming and unexpected effects. Hence Sir G. Baker has observed, that an intermittent is less formidable than arsenic itself.

It has been suggested, that it would be more safe, and perhaps equally effectual in its operation, if it was brought to the state of a neutral salt. It is found, according to the process of Morveau, that when equal quantities of nitrate of potash and oxide of arsenic are distilled together by a strong heat, that the arsenic is converted into an acid, which, uniting with the alkali, forms the arseniate of potash. This preparation, however, does not possess any superior advantage.

Of the different species of Inflammation. By Carm. Smyth, M. D. Medical Communications, vol. ii.

" After having, for a considerable time, carefully attended to the various forms of inflammation, it appears to me, that the principal causes of specific distinction amongst them may be referred to one or other of the four following circumstances :

" The first is the cause exciting the inflammation.

" The second, the function, or use in the animal economy, of the part inflamed.

" The third, the natural texture or structure of the same.

" The fourth, that texture or structure of a part which is not natural to it, but is the consequence of some previous disease.

" Although the proximate cause of inflammation, must in every instance be one and the same, the more remote and evident causes, the objects of sense and of observation, are widely different, and have considerable influence in varying both the appearance and nature of the disease. The inflammation of the eye, which is frequently brought on by cold or external injury, is often the consequence of a scrofulous or venereal taint. But the disease, though the same in appearance, is found to differ very essentially, and to require a very different treatment, according to the nature of the cause.

" The appearance, termination, and method of cure in the angina, or inflammation of the fauces, are extremely different, where the complaint has been owing to cold; has arisen from a venereal infection; or has been occasioned by contagious miasmata. How opposite, for instance, are the effects that follow from the absorption of venereal, cancerous, or septic acrimonies, and yet all of them, in the first instance, excite pain and inflammation.

" The second circumstance mentioned as a cause or source of specific distinction amongst inflammations, was the function of the part inflamed; this circumstance, perhaps the least important of any, has, from being the most obvious, given rise to the greatest number of distinctions amongst inflammations; physicians have looked upon the inflammation of every particular organ of the body as a distinct and specific disease. Now, although the propriety of distinguishing with accuracy the organ immediately affected by inflammation cannot be called in question, yet we must acknowledge, that in all such cases, the great difference in the symptoms is more owing to a difference in the function of the part inflamed, than to any specific difference in the nature of the inflammation, which, in most instances of visceral inflammation, is nearly of the same kind, terminates in the same manner, and requires the same general treatment.

" The third circumstance stated as a cause of specific distinction amongst inflammations, was the peculiar texture or structure of the part inflamed; a circumstance which, though hitherto overlooked, or but slightly attended to, seems to constitute some of the most important distinctions of this disease. Experience has long since taught us, that every part of an animal body, the cuticle and hair perhaps excepted, is liable to inammation; and by attending strictly to the phenomena, it is qually evident, that according to the nature of the part afected, the disease puts on a different appearance, is accomanied by different symptoms, is of various termination, beomes more or less acute or chronic, and requires a different, nd at times an opposite treatment. I do not, however, pretend o have fully investigated this subject, or to be able to ascertain ll the various shades of inflammation, according to the great iversity of structure observable in the different parts of the ody. I only propose to give the outlines of some of the most obvious and striking distinctions originating from this source, and which, as they occur frequently in practice, are of more immediate concern to the practical physician. The following, then, in my opinion, may be justly considered as distinct species of inflammation, each of them having a specific character, strongly marked, which, in every instance, seems entirely to depend upon the peculiar structure of the part inflamed. 1*st*, Inflammation of the skin, Erysipelas. 2*d*, Of the cellular membrane, Phlegmon. 3*d*, Of the diaphonous membranes. 4*th*, Of the mucous membranes. 5*th*, Of the muscular fibres.

Action of the Vessels in Inflammation. From Mr John Hunter on Inflammation, &c.

" The act of inflammation would appear to be an increased action of the vessels, but whatever action it is, it takes place most probably in the smaller vessels; for it may be confined almost to a point where nothing but the smallest vessels exist. (It may be here remarked, that the action of vessels is commonly supposed to be contraction, either by their elastic or muscular coats; but I have shewn that their elastic power also dilated them; and I have reason to believe their muscular power has a similar effect.) The larger vessels may be considered as only the conveyers of the materials for the smaller to act upon and dispose of, according to the different intentions; however, an inflammation in a part is not only an action of the smaller vessels in the part itself, but in the larger vessels leading to it. This is proved by a whitlow taking place on the end of a finger; for although the inflammation itself shall be confined to the end of a finger, and the inflammatory sensation or throbbing be situated in this part, yet we can feel by our hands, when we grasp the finger, a strong pulsation in the two arteries leading to the inflamed part, while no such pulsation can be felt in the other fingers; and if the inflammation is very considerable, the artery, as high as the wrist, will be sensibly affected, which proves that the arterial system is at that time dilating itself, and allowing a much larger quantity of blood to pass than is usual. This is probably by continued sympathy.

« The very first act of the vessels, when the stimulus which excites inflammation is applied, is, I believe, exactly similar to a blush. This, I believe, simply an increase of distension beyond their natural size. This effect we see takes place upon many occasions; gentle friction on the skin produces it; gently stimulating medicines have the same effect, a warm glow is the consequence, similar to that of the cheek in a blush, and if either of these be increased or continued, real inflammation will be the consequence, as well as excoriation, suppuration, and ulceration.

« The parts inflamed appear to become more vascular; but how far they are really so, I am not certain, for this appearance does (at least in part) arise from the dilatation of the vessels, which allows the red part of the blood to go into vessels where only serum and coagulating lymph could pass when they were in a natural state; and till the newly extravasated substances become vascular, the effect is most probably owing wholly to the above cause.

« This incipient enlargement of the vessels upon the first excitement of inflammation is satisfactorily seen in the following manner. Make an incision through the skin on the inside o three

he upper part of a dog's thigh, there inches long; by pulling he cut edges asunder, and observing the exposed surface, we hall see the blush or ash-coloured cellular membrane covering he different parts underneath, with a few arteries passing through t to the neighbouring parts; but in a little time we shall see hese vessels increasing in size, and also smaller vessels going off from them that were not before observable, as if newly formed or forming; the number and size shall increase till the whole surface shall become extremely vascular, and at last the red blood shall be thrown out in small dots on the exposed surface, probably though the cut ends of the arteries that only carried lymph before.

"As the vessels become larger, and the part becomes more of the colour of the blood, it is to be supposed there is more blood in the part; and as the true inflammatory colour is scarlet, or that colour which the blood has when in the arteries, one would from hence conclude, either that the arteries were principally dilated, or at least if the veins are equally distended, that the blood undergoes no change in such inflammation in its passage from the arteries into the veins, which I think is most probable; and this may arise from the quickness of its passage through those vessels.

"The vessels both arteries and veins, in the inflamed part, are enlarged, and the part becomes visibly more vascular; from which we should suspect, that instead of an increased contraction, there was rather what would appear an increased relaxation of their muscular powers, being, as we might suppose, left to the elasticity entirely. This would be reducing them to a state of paralysis simply; but the power of muscular contraction would seem to give way in inflammation; for they certainly dilate more in inflammation than the extent of the elastic power would allow: and it must also be supposed that the elastic power of the artery must be dilated in the same proportion. We must suppose it something more than simply a common relation: we must suppose it an action in the parts to produce an increase of size to answer particular purposes; and this I should call the action of dilatation, as we see the arteries increase in size in the time of gestation, as well as of the os tincæ in the time of labour, the consequence of the preceding actions, and necessary for the completion of those which are to follow."

On the Properties of Pus. By Mr Everard Home.

" Pus I shall define to be a whitish fluid, made up of globules, and a transparent aqueous liquor. Its production depends upon inflammation having previously taken place in some part of the body, either in the common reticular membrane, upon the internal surface of circumscribed cavities, or the surfaces of internal canals, which I shall call excretory ducts.

" Pus taken from a healthy sore, near the source of the circulation, as on the arm or breast, readily separates from the surface of the sore, the granulations underneath being small pointed, and of a florid red colour, and has the following properties: It is nearly of the consistence of cream; is of a white colour; has a maukish taste; and when cold is inodorous; but when warm, has a peculiar smell. Examined in the microscope, it is found to consist of two parts, of globules, and a transparent colourless fluid: the globules are probably white, at least they appear to have some degree of opacity: its specific gravity is greater than that of water: it does not readily go into putrefaction: exposed to heat it evaporates to dryness, but does not coagulate: it does not unite with water in the cold of the atmosphere, but falls to the bottom; yet, if kept in a considerable degree of heat, rises and diffuses through the water, and remains mixed with it, even after having been allowed to cool; the globules being decomposed. Pus varies in its appearance, according to the different circumstances which affect the sore that forms it; such as the degree of violence of the inflammation; also its nature, whether healthy or unhealthy, and these depend upon the state of health and strength of the parts yielding the pus. These changes arise more from indolence and irritability, than from any absolute disease; many specific diseases in healthy constitutions, producing no change in the appearance of the matter from their specific quality, but by rendering the sore either indolent or irritable. Thus the matter from a gonorrhæa, from the small-pox pustules, the chicken-pock, and from a healthy ulcer, has the same appearance, and seems to be made up of similar parts, consisting of globules floating in a transparent fluid, like common pus, the specific properties of each of these poisons being superadded to those of pus. Matter from a cancer may be considered as an exception; but a cancerous sore is never in a healthy state.

" In indolent ulcers, whether the indolence arises from the nature of the constitution, weakness of the parts, or the nature of the inflammation, the pus is made up of globules and flaky particles floating in a transparent fluid, and these globules and flakes are in different proportions, according to the degree of indolence. This is particularly observable in scrofulous abscesses, preceded by a small degree of inflammation. That this flaky appearance is no part of true pus, is well illustrated by observing, that the proportion it bears to the globules is greatest where there is the least inflammation.

" The constitution and part must be in health to form good pus; for very slight changes in the general health are capable of producing an alteration in it, and even of preventing its being formed at all, and substituting in its place coagulable lymph. This happens most readily in ulcers in the lower extremities, owing to the distance of the parts from the source of the circulation rendering them weaker. And it is curious to observe the influence that distance alone from the heart has upon the appearance of pus.

" In irritable sores, the discharge is often thin, being principally made up of an aqueous fluid possessed of an irritating quality, and containing few globules. Such sores are commonly attended with hæmorrhage from the smaller vessels, by which means the discharge is very materially altered in its properties, is rendered acrid, and more ready to run into putrefaction than true pus.

" The property which characterizes pus, and distinguishes it from most other substances, is its being composed of globules. This appears to me to throw considerable light on the subject; since the presence of globules seems to depend upon the pus being in a perfect state; from which we learn the circumstances necessary for the production of good pus. Mr Hunter was, I believe, the first who took notice of this property; and has thereby furnished us with a very accurate distinction between pus and animal mucus. For the appearance of what is properly termed mucus, that is animal substance dissolved from putrefaction, is flaky, and very different in its appearance from pus. It differs from the blood in the colour of the globules; in their not being soluble in water, which those of the blood are; and from the fluid in which they swim being coagulable by a solution of sal ammonia, which serum is not.

" Inflammation appears to be not only the forerunner, but the absolute cause of the formation of pus; and there are some facts which furnish strong arguments in favour of the ingenious idea Mr Hunter has suggested, " That the vessels of the part take on the nature of a gland, and secrete a fluid which becomes pus." It is always in harmony with the parts which form it, having no power of irritating them, even when the surrounding parts are affected by it. This seems to be peculiar to secretions. The parts which form it assume a structure similar to that of a gland, by becoming exceedingly vascular, and, what is deserving of observation is, that parts appear to require more time to be rendered fit for carrying on this process, in proportion as they are different in structure from a gland. In internal canals, which have naturally a secreting surface, us is formed in five hours; on the cutis, which is very vas-ular, in less than twenty hours; and in common muscles, early in forty-eight hours.

"Pus, at its formation, is not globular, but a transparent fluid, f a consistence in some sort resembling jelly; and, that the lobules are formed while lying upon the surface of the sore, equiring, in some instances, while the influence of the exter-al air is cut off, fifteen minutes for that purpose.

"In treating of the effects which matter produces on the ody, I shall consider it as essential to the formation of granulations in wounds which are kept from healing by the first in-ention or adhesions. But what the particular effects are by which pus either gives rise to, or assists the process of forming granulations, I must confess myself to be entirely ignorant. Nor am I acquainted with any effect which it produces on the parts which formed it, or upon the constitution, believing that all the effects which are attributed to matter do not arise from any property in the matter, as pus, but are in consequence of some extraneous substance being mixed with it, or some morbid affection of the parts which formed it."

On Chronic Hepatitis. From Dr Saunders on the Liver.

"The liver is an organ very susceptible of chronic inflammation, which, without alarming in the first instance, by painful or active symptoms, gradually induces obstruction; first with an increase, and frequently afterwards a diminution of its bulk, perhaps ultimately obliterating the capillary system and pori biliarii, the more immediate seat of secretion. In such cases, the patient will be subject to occasional pain in the right hypochondrium, extending to the scapulæ, a quick pulse, an increase of heat, alternating with chilly sensations, difficult breathing on quick motion, some difficulty on lying on the left side, flatulency, indigestion, acidity, costiveness, and, together with a gradual diminution of strength and flesh, the patient has a pale or sallow complexion. Such symptoms are accompanied with a defect in the secretion of bile, and a torpid state of the intestines. It is probable, that under these circumstances the original mischief is in the stomach and duodenum, and that the sympathetic action on the liver is less, on which perhaps healthy secretion may depend. Hence dyspeptic complaints generally precede affections of the liver, and arise from intemperance either in eating or drinking, but are more particularly induced by the abuse of spiritous liquors, even though diluted with water.

" When the symptoms of active inflammation have been checked, though not effectually removed, by the antiphlogistic practice, the disease frequently becomes chronic, and terminates in a schirrous induration of the organ. In chronic inflammation, a condition obtains in some degree the reverse of the former. Instead of appearances which accompany and characterize acute and active inflammation, there are manifest signs of indolence and want of action in the circulating system. The colour natural to this organ in the healthy state, and which appears to be imparted to it from the bile, is lost; it assumes an ash or clay coloured hue, evidently connected with a diminished secretion. This kind of liver is obviously smaller; it undergoes a change in shape; the lower edge, which is naturally thin, especially of the left lobe, becomes rounded and gibbous. If we cut into its substance, we find uniformly a solid compact appearance, interspersed with foramina, evidently the orifices of divided vessels; but if we compare the cut surface of a diseased liver with that of a healthy one, we observe a very sensible difference, the latter being much more porous than the former. Observation has evinced, that, together with a diminution of bulk, there is some degree of loss in its weight, evidently proving that a portion of its solid substance has been removed. I strongly suspect that this diminu-

ion of substance obtains in different degrees, according to the
uration of the complaint. In the more early stages of schir-
osity, the liver is not sensibly diminished in its bulk ; nay, I
m persuaded that there is at this period an increase both of
ulk and weight, but that afterwards there is a gradual diminu-
ion of both ; and this is nothing more than may be expected,
hen we consider the causes that occasion this disease. These
auses are of a nature which tend to produce a hurried, and
onsequently an imperfect secretion of bile, viz. long residence
a warm climate, and the immoderate use of ardent spirits.
o produce an increased secretion of bile, it is evident there
ust be an increased action of the branches of the vena porta-
um : hence a condition of vessels is induced, approaching in
ome respects to that of inflammation, with this difference,
at it is an inflammation in which the vein, or secreting ves-
el, is more concerned than the artery or nutrient vessel.
he effect of this action, especially when protracted to a consi-
erable extent, must necessarily be that of inducing an altera-
on in the structure of the part,—an alteration similar to what
btains in other organs labouring under indolent and chronic
nflammation. This change of structure, from its solidity and
ompactness, seems to depend on the affusion of the coagula-
le lymph into the parenchymatous substance of the liver, with
is peculiarity, that while it is, in active inflammations, depo-
ted by arteries, it is, in the chronic kind, effused by the
eins.

“ An opinion has for some time prevailed, that mercury is a
pecific in every disease of the liver ; and that even in active
hlegmonous inflammations it will obviate suppuration. In
e East Indies, where this complaint is endemic, I am inform-
d, on the best authority, that many judicious and successful
ractitioners seldom administer mercury until the violence of
e inflammatory action has been moderated by bleeding, active
urging, and the antiphlogistic plan of treatment. Then it is
at mercury is employed to the greatest advantage. But it

appears, on attentive observation, that the transition of active inflammation into a state of resolution is not immediately followed by a healthy condition of the part, but it remains for a time debilitated and disposed to lapse into a chronic state. This will probably be found the proper period for the exhibition of mercury, which acts as a spur on the vascular system of this organ, and by its moderately stimulating effects, occasions a degree of action, which, when protracted to a proper length, terminates in health. But the disposition of hepatitis to terminate in a schirrous and diseased structure, either of the whole, or of a part of the liver, is so strong in some cases, as not to be resisted by a moderate mercurial action. Here we are to take the advantage of its more active operations; and, instead of inducing a slight change on the pulse, with only a tenderness of the mouth, we ought to extend its effects to the production of a gentle salivation, which, when continued for a length of time, generally effects a cure."

Diseased appearances of the Liver. From Dr Baillie's Morbid Anatomy.

" The external membrane of the liver is not uncommonly ſound in a state of inflammation. When it is confined to the membrane of the liver, it is not unfrequently extended over the whole of it, but more commonly takes place in that part which covers the anterior or convex part of the liver. It is crowded with a great number of very minute vessels, which contain florid blood, and is thicker than in its natural state. There is also thrown out upon its surface a layer of coagulable lymph; this layer is thicker upon some occasions than others, and often glues the liver more or less completely to the neighbouring parts. Some quantity of serous fluid is at the same time thrown out.

" It is more common to see adhesions formed, which are the consequence of a previous inflammation in the membrane of the liver, than to see the membrane in an actual state of inflammation. These adhesions are formed of the coagulable lymph of the blood, which undergoes a gradual progress of change. They consist very commonly of a thin transparent membrane, which joins the surface of the liver to the neighbouring parts. This junction may be either general over one extended surface of the liver, or it may consist of a number of processes of adhesion: the adhesion is sometimes by a membrane of considerable length; and sometimes the adhesion is very close: the surface of the liver, where these adhesions are most commonly found, is the anterior, by which it is joined to the peritonæum lining the muscles at the upper part of the cavity of the abdomen. When an abscess is formed in the liver, and points externally, these adhesions are of great use in preventing the pus from escaping into the general cavity of the abdomen. Adhesions are also frequently found connecting the posterior surface of the liver to the stomach, and to the duodenum; and these may also be useful in abscesses of the liver, near its posterior surface, by preventing the matter from passing into the general cavity of the abdomen, and conducting it either into the stomach, or the upper part of the intestinal canal.

"It does not often happen, in this country, that the substance of the liver is found in an actual state of inflammation. Where its membrane is inflamed, the substance is sometimes inflamed which lies immediately under it; but it rarely happens that the general mass of the liver is inflamed. In warmer countries, the substance of the liver is much more liable to inflammation than in Great Britain. When the liver is generally inflamed through its substance, it is a good deal enlarged in size, and of a purple colour; its outer membrane is sometimes affected by the inflammation, and sometimes it is not. It is attended occasionally with a jaundiced colour of the skin, arising from the bile not getting readily into the ductus communis choledochus, on account of the pressure of the inflamed liver on the pori biliarii. When this inflammation has continued for some time, abscesses are formed. These abscesses are sometimes of large size, so as even to contain some pints of pus. Sometimes the whole of the liver is almost converted into a bag containing pus. When inflammations of the liver have been of considerable standing, they are not unfrequently attended with ascites, and the water is of a yellow or green colour, being tinged by the bile.

" One of the most common diseases of the liver (and perhaps the most common except the adhesions) is the formation of tubercles in its substance. This disease is hardly ever met with in a very young person, but frequently takes place in persons of middle or advanced age: it is likewise more common in men than women. This seems to depend on the habit of drinking being more common in the one sex than in the other; for this disease is most commonly found in hard drinkers, although we cannot see any necessary connection between that mode of life and this particular disease of the liver.

" The tubercles which are formed in this disease occupy generally the whole mass of the liver, are placed very near each other, and are of a rounded shape. They give an appearance every where of irregularity to its surface. When cut into, they are found to consist of a brownish or yellowish white solid matter. They are sometimes of a very small size, so as not to be larger than the heads of large pins; but most frequently they are as large as small hazel nuts, and many of them are sometimes larger. When the liver is thus tuberculated, it feels much harder to the touch than natural, and not uucommonly its lower edge is bent a little forward. Its size, however, is generally not larger than in a healthy state, and I think it is often smaller. If a section of the liver be made in this state, its vessels seem to have a smaller diameter than they have naturally. It very frequently happens that in this state the liver is of a yellow colour, arising from the bile accumulated in its substance; and there is also water in the cavity of the abdomen.

which is yellow from the mixture of bile. The gall-bladder is generally much contracted, and of a white colour, from its being empty. The bile from the pressure of the hard liver upon the pori biliarii, does not reach the ductus hepaticus, and therefore cannot pass into the gall-bladder. The colour of the skin in such cases is jaundiced, and it remains permanently so, as it depends on a state of liver not liable to change. This is the common appearance of what is generally called a schirrous liver; but it bears only a remote resemblance to scirrhus, as it shows itself in other parts of the body. I should therefore be disposed to consider it as a peculiar disease affecting this viscus."

"There is no gland in the human body in which hydatids are so frequently found as in the liver, except the kidneys, where they are still more common. Hydatids of the liver are usually found in a cyst, which is frequently of considerable size, and is formed of very firm materials, so as to give to the touch almost the feeling of cartilage. This cyst, when cut into, is obviously laminated, and is much thicker in one liver than another. In some livers it is not thicker than a shilling, and in others it is near a quarter of an inch in thickness. The laminæ which compose it are formed of a white matter, and on the inside there is a lining of a pulpy substance, like the coagulable lymph. The cavity of the cyst I have seen, in one instance, subdivided by a partition of this pulpy substance. In a cyst may be found one hydatid, or a greater number of them. They lie loose in the cavity, swimming in a fluid, or some of them are attached to the side of the cyst. They consist of a round bag, which is composed of a white, semi-opaque, pulpy matter, and contain a fluid capable of coagulation. Although the common colour of hydatids be white, yet I have occasionally seen some of a light amber colour. The bag of the hydatid consists of two laminæ, and possesses a good deal of contractile power. In one hydatid this coat or bag is much thicker and more opaque than in another, and even in the same hydatid different parts of it will often differ in its thickness. On the inside of an hydatid smaller ones are sometimes found, which are commonly not larger than the heads of pins, but sometimes they are even larger in their size than a gooseberry. These are attached to the larger hydatid, either at scattered irregular distances, or so as to form small clusters; and they are also found floating loose in the liquor of the larger hydatids. Hydatids of the liver are often found unconnected with each other; but sometimes they have been said to inclose each other in a series, like pill-boxes. The most common situation of hydatids of the liver is in its substance, and inclosed in a cyst; but they are occasionally attached to the outer surface of the liver, hanging from it, and occupying more or less of the general cavity of the abdomen.

" The origin and real nature of these hydatids are not fully ascertained; it is extremely probable, however, that they are a sort of imperfect animalcules. There is no doubt, that the hydatids in the livers of sheep are animalcules; they have been often seen to move when taken out of the liver, and put into warm water; and they retain this power for a good many hours after a sheep has been killed. The analogy is great between hydatids in the liver of sheep, and in that of the human subject. In both they are contained in strong cysts, and in both they consist of the same white pulpy matter. There is undoubtedly some difference between them in simplicity of organization: the hydatid in the human liver being a simple uniform bag, and the hydatid in that of the sheep having a neck and mouth appended to the bag. This difference need be no considerable objection to the opinion above stated. Life may be attached to the most simple form of organization. In proof of this, hydatids have been found in the brains of sheep, resembling almost exactly those in the human liver, and which have been seen to move, and therefore are certainly known to be animalcules. If any person should wish to consider hydatids more minutely, he will find an excellent account of them published by Dr J. Hunter in the Medical and Chirurgical Transactions."

Use of Calomel in Croup. From Hints for the treatment of the Diseases of Infancy, by Dr Hamilton, Professor of Midwifery.

" Immediately upon the attack, the child must be put into a tub of water, heated to the ninety sixth degree of Fahrenheit's thermometer, (that is, to the degree which the hand immersed in can easily bear), or must be wrapped up in a blanket wrung out of hot water. Whether the bath or the fomentation be employed, it ought to be continued for at least ten minutes; and then the child should be carefully rubbed dry, wrapped up in warm flannel, and put to bed.

" A dose of calomel is now to be given, and repeated every hour till the breathing be evidently relieved; when it is to be gradually discontinued, allowing at first two, then three, and finally four or five hours to intervene between each dose, according to the state of symptoms. This medicine commonly occasions both vomiting and purging; and in true croup, the first alleviation of symptoms generally follows the discharge of a great quantity of dark green coloured matter (like boiled spinage) by stool; but if the attack have been that of spurious croup, the breathlessness ceases after vomiting has occurred.

" The dose of calomel is to be regulated principally by the age of the little patient. During the first year it should be from one to two grains; during the second, two grains and a half; during the third and fourth years, from three to four grains; and during the fifth and sixth, from four to five grains. During the course of the disease, nothing else than liquids should be allowed to the child. The room in which the little sufferer is kept ought to be moderately warm. When the disease has begun to yield to this treatment, nourishment suited to the habits and circumstances of the child is to be exhibited in small quantities, and often repeated. In some cases considerable weakness remains after the crouping has ceased, in consequence partly of the violence of the symptoms, and partly of the operation of the calomel. Under such circumstances, cordials, particularly weak white wine whey, and a blister to the breast become necessary. But if proper attention have been paid to the precaution of lessening the number of doses of calomel, whenever the disease is in the least alleviated, the ordinary health of the child will be found restored within a very short time after the symptoms of croup have disappeared.

" For the cure of this formidable disease, practitioners formerly trusted chiefly to bleeding, with the use of vomits and blisters as auxiliaries; but the result of the practice was, in the more favourable cases, a very considerable shock to the constitution, and, in the majority of instances, the death of the child. These circumstances rendered it fair to make a trial of the practice of giving calomel, first suggested by some American physicians. Accordingly, an old pupil recommended it to me about eight or nine years ago. I agreed to make a cautious trial of it; and having now employed it for seven years, and having most accurately and carefully attended to its effects, I consider myself fully warranted in giving the above directions. I have had the happiness to see the disease yield where its violence seemed to threaten almost immediate death; and among the little patients on whom it has been successfully tried, one of five months old had thirty-two grains of calomel within twenty-four hours; and another of the same age, the infant of an officer of excise, eighty-four grains within seventy-two hours. A girl, the daughter of a respectable tradesman in College Street, seven years of age, had, within little more than sixty hours, an hundred and thirty-three grains, and two days after appeared as if she had never had a complaint. In every case where it was employed, previous to the occurrence of lividness of the lips and other mortal symptoms (amounting now to above forty) it has completely succeeded, both in curing the disease and in preventing any shock to the child's constitution.

In three instances where the case seemed desperate, it was thought right to try its effects, rather than leave the patient to his fate. It neither aggravated nor mitigated the symptoms.

"It is necessary to add, that I have now seen two cases, where, although all symptoms of the croup were removed by the use of calomel, the patients sunk from the weakness which followed. One was an infant of nine months, and the other a child of four years old. Both cases were under the care of the same practitioner, and he candidly admitted that he had carried the practice too far. When I was called in, the vital powers could not be renewed by the most powerful stimulants. But in another case to which I was called, where the debility was very great after the use of the calomel, the infant was saved by means of a blister, and a very liberal use of opiates, and wine diluted with milk. Those cases enforce the necessity for carefully watching the progress of the disease, so as to stop the calomel whenever the symptoms begin to yield. In a case where croup occurred after scarlet fever, along with the calomel, a decoction of snake root, the favourite remedy of some American practitioners, wine, opiates, and blisters, were employed, and the child recovered."

Cow-Pox.

It will be necessary to give a succinct account of a discovery, which has of late forcibly arrested the attention of medical men, and of the world at large; and which promises ultimately to be productive of no inconsiderable advantage to mankind, namely, the introduction of the Cow-pox.

Our more enlarged knowledge of the laws of morbid action suggested the possibility of superseding one disease by substituting a milder in its place: And the application of the cow-pox has proved the truth of this opinion. The following are the leading facts relating to it.

Cows are subject to an eruptive disorder, which affects their udder and teats. On these parts, irregular pustules of a bluish or livid colour appear; they are surrounded by an erysipelatous inflammation, contain an acrid watery fluid, and are apt to degenerate into phagedenic ulcers. These affections are for the most part entirely local; sometimes however the animal is indisposed, and the secretion of milk impaired.

Those employed in milking the cows affected with this complaint are often attacked with inflamed spots on their hands, and particularly on the joints of their fingers, which assume the appearance of vesications, of a bluish colour, depressed in the middle with an inflamed circular margin. The absorbed matter produces tumours of the axillæ, the constitution becomes affected, and febrile symptoms supervene, accompanied with pains in the head, loins, and limbs, and even now and then a slight delirium.

These symptoms continue from one to four days, when they generally abate, leaving ill-conditioned ulcerated sores about the hands, which heal with difficulty. This is the course which the *casual* cow-pox commonly pursues; it is never fatal; and the local affection, though sometimes troublesome, generally yields to proper management. But what renders it so peculiarly interesting, is, its securing the person for ever after from an attack of the small-pox.

The origin of this disease is still matter of dispute. Dr Jenner, to whom we are indebted for calling our attention to this subject, has endeavoured to trace its source to that inflammatory swelling in the heal of the horse, called the *Grease*, which generates a very acrid and irritating matter, capable of producing ulceration wherever it is applied. The men servants, in the different dairy counties, who are accustomed to assist in milking, are supposed to infect the cow with this peculiar matter. This is likewise a popular opinion in several of the counties where this disease prevails; and it has been observed that the grease generally precedes the cow-pox. Besides, men who come in contact with the matter which issues from these sores in horses, are occasionally attacked with ulceration, and other symptoms, somewhat resembling those which accompany the cow-pox; and it has been asserted, that this matter, when applied to the teats of cows, produces pustules, which infect the human subject with the genuine cow-pox. There is still, however, a considerable degree of obscurity about this point. Those circumstances, however, which are of most importance, are better ascertained, and require distinct notice.

The first fact, which renders this subject a matter of such interesting inquiry, is, that the cow-pox communicated in the natural way, or by inoculation, destroys in those persons who are affected with the local disease and symptomatic fever, all susceptibility of infection from the matter of small-pox. This fact is now established upon such respectable testimony, from the very extensive and unprejudiced examination which it has undergone, that the general rule cannot be invalidated by the few exceptions which have been stated against its universality. While it guards the constitution against the small-pox, it likewise agrees with it in not preventing the local effect which will be produced by the subsequent inoculation of this latter distemper.

The next important consideration, without which the above statement would be perfectly unavailing, is, that the natural cow-pox is both greatly milder and safer than the small-pox, and that when both are inoculated, the former still maintains a proportioned superiority.

Another decided advantage which the cow-pox possesses over the small-pox is, that the former is not contagious; it is not propagated by the air, nor communicated in any other way than by actual contact. Hence those who are in the vicinity of the infected person, and who have not previously been affected with the disease, are not exposed to the mischievous consequences of suffering from contagion, which is always to be apprehended in the inoculated small-pox.

We have hitherto attended chiefly to the *natural* cow-pox, or that which is received from handling the teats of the cow. The *inoculated* cow-pox, however, claims primary attention, as it is generally resorted to, from its possessing all the advantages of the former, and from its always rendering the disease milder. It generally exhibits the following symptoms: About the third day after the insertion of the vaccine matter, a small inflamed spot is distinctly observed at the place where the puncture had been made. This continues to spread, hardens, and appears in the form of a circular tumour, somewhat elevated above the level of the skin. A speck is observed, about the sixth day, arising from a small quantity of fluid, which increasing, the pustule continues to enlarge till about the tenth day: It is now distinctly circumscribed; the edges are elevated, and the centre depressed; in which latter respect it differs from the small-pox. About the eighth day, the derangement of the system becomes apparent, preceded generally by pain at the pustule, and in the axillæ.

The symptoms are lassitude, shiverings, headach, and pain in the limbs, accompanied with a quickened pulse. This slight indisposition continues for a day or two, and then abates. During the continuance of these symptoms, the pustule becomes encircled with an erysipelatous inflammation of more than an inch in breadth; and this points out the affection of the system, which either precedes or accompanies this appearance. The fluid in the pustule now begins to dry up, and a hard brown scab appears upon its surface, which after remaining a week or two, spontaneously falls off, leaving the part beneath perfectly sound. While the fluid is drying up, the colour of the inflammation becomes less vivid, and in a day or two totally disappears. This is the course which the cow-pox pretty uniformly pursues; the different stages are well marked, and their succession regular.

One of the most important deviations from the usual course of this distemper is a pustular eruption, which has sometimes een observed in different parts of the body; it proceeds to maturation, and is capable of communicating the disease, when nserted in the usual manner. These however occur rarely, nd have been ascribed to different causes. The most probable s, that the persons labouring under the vaccine disease have been exposed to the contagion of small-pox, as it is now ascertained that during the early stages of this complaint no security is afforded against that contagion.

The almost uniform mildness of this disease renders medical assistance in general unnecessary, and its cure is intrusted altogether to regimen. In adults, when the febrile affection rises to any height, a purge of some neutral salt is generally sufficient.

Although the local sore occasions, for the most part, little trouble, it sometimes creates considerable uneasiness from the extent to which the inflammation runs. In these cases, those applications which are useful in restraining inflammation are indicated. Vinegar and water, or a solution of the acetite of lead, are commonly sufficient for this purpose. Mercurial ointment, or the red precipitate of mercury, formed into an ointment, have been powerfully recommended; and the happiest effects have resulted from the affected part being daily dressed with these applications. Much circumspection is required in employing them; it is only in rare cases, when the inflammation has run to a great height, after the ninth or tenth day, that they can be resorted to with safety. When applied sooner, there is danger of their checking the progress of the disease, before it has produced those salutary effects which are necessary to secure the constitution against the future invasion of the small-pox.

We are by no means, from the absence of general indisposition, to conclude that the disease has failed, as most infants have little or no constitutional affection. In ascertaining this most important point, the local affection going regularly through its successive stages deserves primary consideration. When either the punctured part appears only slightly discoloured for a day or two, or becomes highly inflamed, we, with reason, distrust the success of the operation.

It is of considerable moment to attend to the nature of the matter with which the patient is inoculated, as no small inconvenience might arise from a fallacy in this particular. Hence we should be cautious of introducing matter from a spurious cow-pox, or from the sore produced by that distemper, after it may have degenerated into a common ulcer. Matter, likewise, which was originally good, by being too long kept, may undergo such alterations as unfit it for this purpose. It is often soon deprived of its activity, and does not appear to be capable of being, in general, near so long preserved as variolous matter. The most proper time for taking the cow-pox matter is from the sixth day, when the formation of fluid commences, to the tenth, when it begins to dry up.

Cold Affusion in Scarlatina. From Dr Currie's Reports.

" Though I have hitherto abstained from the use of the cold affusion in the phlegmasiæ in general, considering the presence of topical inflammation as in some measure precluding its use, yet I regard the subject as inviting inquiry in the case of the erysipelatous affections. In several of the exanthemata, it may be employed with striking advantage. No one will doubt that it is applicable to the eruptive fever of small-pox, a disease happily becoming rare among us ; but it is not equally known, that it may be used with the most singular benefit in the eruptive fever of scarlatina, whose ravages are becoming every day more extensive and more familiar all over Europe, and for which, no Jenner has yet arisen to propose a sovereign antidote.

" Physicians are now pretty generally agreed, that scarlatina and cynanche maligna proceed from the same contagion, and are therefore different degrees of the same disease. The varieies of the scarlatina, are, in fact, not greater than the varieties f the small-pox, to which they bear a very strict analogy. I ow consider the same individual to be liable to scarlatina, nce only. I have indeed heard of one or two instances to the ontrary; and Dr Heberden is of opinion that such have occured; but it must be admitted on all hands that they are rare, o rare indeed, as scarcely to require to be taken into account n our practice.

" After some previous lassitude of uncertain duration, the carlatina anginosa comes on with the usual symptoms of pyrexia, —shivering, pain in the back and head, nausea, and frequently omiting; in proportion to the violence of these symptoms, and o the rapidity of their progress, is the danger of the disease. In n hour or two, morbid heat comes on, and speedily mounts up ar beyond the temperature of health, this accession of heat being generally attended by a great sensibility, and bright red flushing over the whole surface of the body, with some stiffness of the neck, hoarseness of the voice, and rawness of the throat. If the thermometer be applied to the surface of the body, after the sensation of heat has become steady, the mercury will be found to rise to 105° and 106°, even in mild cases; and in more violent cases, to 103°, 109°, and 110°. I have known it to rise as high as 112°, the greatest heat I ever observed in the human body. It is on the first appearance of this high temperature, that it is necessary to act with vigour. On our conduct, at this critical season, the patient's life often depends.

The plan that I follow, if called in at this early period, is to strip the patient, and dash four or five gallons of the coldest water to be procured, over his naked body. This produces its usual cooling effects; but these are less permanent than in typhus. In one or two hours afterwards, the heat is often found, on examination, as great as before. The affusion is therefore repeated again and again, as the obstinacy of the heat may indicate. It is sometimes necessary to use it ten or twelve times in twenty-four hours. At the end of this time, but commonly earlier, the force of the fever is broken, and a few tepid affusions at longer intervals are sufficient to subdue it entirely. During this time, cold water and lemonade should be used as drinks, and the bowels opened, if necessary, by calomel. In a few cases, I have thought it advisable to asist the affusion by the diaphoretic effect of a solution of tartarized antimony. If left to myself, I use no other means. Considerable languor and debility, with a disposition to rest and sleep, follow this bold arrestation of the fever. I have seen these appearances such as to excite some uneasiness, lest coma were coming on, or the powers of life sinking. But I never saw any real ground of alarm; and it is sufficient to keep up, if necessary, the heat of the surface of the body, and particularly of the extremities, by integuments, leaving the patient to that profound repose in which nature delights after violent agitations. On the third day, very generally, or sometimes the fourth, the patient is convalescent. If the throat be examined, there will be found some fulness and redness, and perhaps some white specks on the tonsils, but nothing that can be called ulceration. There are of course none of the secondary symptoms to which ulcerations give rise. In no instance did I ever see delirium come on after the use of the cold affusion. The peculiar dropsical affection indicated by the swelling in the hands and feet, does frequently occur, and sometimes there is a slight cough. These pass away of themselves, or, if necessary, may be removed by the digitalis and crystals of tartar.

" In cases where, from the timidity of parents, or the apprehensions of those with whom we are called to consult, this decisive practice cannot be fully adopted, the tepid affusion may be had recourse to with very considerable, but inferior effect. It will not arrest the disease unless very slight, but it will moderate its violence, by moderating the heat, and in the end producing sensible perspiration.

" Where I do not see the scarlatina anginosa until the third or fourth day, or even later, if the morbid heat continue to be great, I use the cool affusion; if less considerable, the affusion

old or tepid. It is still an excellent remedy, diminishing
eat and irritation, and producing quiet sleep; but though it
essens, it cannot arrest the disease. If the ulcers of the throat
re foul, and the breath fœtid, an infusion of Cayenne pepper,
tronger or weaker, according to the sensibility of the parts,
nakes an excellent gargle; half a grain of pepper to an ounce
f water is a proper strength to begin with. This was recom-
nended to me by the late Mr Macbeth of Demerary, and it
leserves the praises he gave it. It is detergent and antiseptic in
high degree: it may even be given internally with advantage,
n those cases which sink into debility and putrescence, and
vhere bark and wine are required.

" The scarlatina continued prevalent during the autumn of
801, and throughout the succeeding winter and spring; and
hough less frequent since, it may be said to have been con-
tantly present at Liverpool, in a greater or less degree, up to
he present time (1805). In all the cases which I have seen
uring this period, amounting to upwards of a hundred and
fty, I have uniformly followed the practice which I have just
escribed, and with a degree of success so nearly invariable,
hat I cannot contemplate it without emotions of surprise as
vell as of satisfaction. In the course of this time, I have had
ccasion to combat the scarlatina twice in public schools, and
n both instances was completely successful, not merely in the
ecovery of my patients, but in stopping the progress of the dis-
ase. The use of this remedy undoubtedly strengthens the
onfidence in the means of prevention, recommended in the
vritings of Dr Haygarth, Dr Clark, and Dr Blackburn, and now
enerally adopted by the scientific part of our profession."

ffects of Digitalis in Dropsy, Hæmorrhagy, Phthisis, &c. Extracted from Drs Withering, Ferriar, and Currie.

" The Foxglove, when given in very large and quickly repeated doses, occasions sickness, vomiting, purging, giddiness, confused vision, objects appearing green or yellow, increased secretion of urine, with frequent motions to part with it, and sometimes inability to retain it; slow pulse, even as slow as 35 in a minute, cold sweats, convulsions, syncope, death. When given in a less violent manner, it produces most of these effects in a lower degree; and it is curious to observe, that the sickness, with a certain dose of the medicine, does not take place for many hours after its exhibition has been discontinued; that the flow of urine will often precede, sometimes accompany, frequently follow the sickness at the distance of some days, and not unfrequently be checked by it. The sickness thus excited is extremely different from that occasioned by any other medicine: it is peculiarly distressing to the patient: it ceases, it recurs again as violent as before; and thus it will continue to recur for three or four days, at distant and more distant intervals. These sufferings of the patient are generally rewarded by a return of appetite, much greater than what existed before the taking of the medicine. But these sufferings are not at all necessary; they are the effects of our inexperience, and would in similar circumstances more or less attend the exhibition of almost every active and powerful medicine we use.

" Perhaps the reader will better understand how it ought to be given, from the following detail of my own improvement, than from precepts peremptorily delivered, and their source veiled in obscurity.

" At first, I thought it necessary to bring on and continue the sickness, in order to insure the diuretic effects. I soon learned that the nausea being once excited, it was unnecessary to repeat the medicine, as it was certain to recur frequently, at intervals more or less distant. Therefore my patients were ordered to persist until the nausea came on, and then to stop. But it soon appeared that the diuretic effects would often take place first, and sometimes be checked when the sickness or purging supervened. The direction was therefore enlarged to continue the medicine until the urine flows, or sickness or purging takes place. I found myself safe under this regulation for two or three years, but at length cases occurred in which the pulse would be retarded to an alarming degree, without any other preceding effect. The directions therefore required an additional attention to the state of the pulse, and it was moreover of consequence not to repeat the doses too quickly, but to allow sufficient time for the effects of each to take place, as it was found very possible to pour in an injurious quantity of the medicine, before any of the signals for forbearance appeared. *Let the medicine therefore be given in the doses, and at the intervals mentioned. Let it be continued until it either acts on the kidneys, the stomach, the pulse, or the bowels; let it be stopped upon the first appearance of any of these effects*, and I will maintain that the patient will not suffer from its exhibition, nor the practitioner be disappointed in any reasonable expectation. If it purges, it seldom succeeds well. The patients should be enjoined to drink very freely during its operation. I mean, they should drink whatever they prefer, and in as great quantity as their appetite for drink demands.

" In cases of ascites and anasarca, when the patients are weak, and the evacuation of the water rapid, the use of a proper bandage is indispensably necessary to their safety. If the water should not be wholly evacuated, it is best to allow an interval of several days before the medicine be repeated, that food and tonics may be administered; but truth compels me to say, that the usual tonic medicines have in these cases very often deceived my expectations. From some cases which have occurred, I am disposed to believe that the digitalis may be given in small doses, viz. two or three grains a-day, so as gradually to remove a dropsy, without any other than mild diuretic effects, and without any interruption to its use until the cure be completed. If inadvertently the doses of the foxglove should be prescribed too largely, exhibited too rapidly, or urged to too great a length; the knowledge of a remedy to counteract its effects would be a desirable thing. Such a remedy may perhaps in time be discovered. The usual cordials and volatiles are generally rejected from the stomach; aromatics and strong bitters are longer retained; brandy will sometimes remove the sickness when only slight; I have sometimes thought small doses of opium useful, but I am more confident of the advantage from blisters. Mr Jones in one case found mint tea to be retained longer than any other thing.

"Independent of the degree of disease, or of the strength or of the age of the patient, I have had occasion to remark, that there are certain constitutions favourable and others unfavourable to the success of the digitalis.

"It seldom succeeds in men of great natural strength, of tense fibre, of warm skin, of florid complexion, or in those with a tight and cordy pulse. If the belly in ascites be tense, hard, and circumscribed, or the limbs in anasarca solid and resisting, we have but little hope. On the contrary, if the pulse be feeble or intermitting, the countenance pale, the lips livid, the skin cold, the swollen belly soft and fluctuating, or the anasarcous limbs readily pitting under the pressure of the finger, we may expect the diuretic effects to flow in a kindly manner.

"In cases which foil every attempt at relief, I have been aiming for some time past to make such a change in the constitution of the patient, as might give a chance of success to the digitalis. By blood-letting, by neutral salts, by crystals of tartar, squills, and occasional purging, I have succeeded, though imperfectly. Next to the use of the lancet, I think nothing lowers the tone of the system more effectually than the squill, and consequently it will always be proper, in such cases, to use the squill; for if that fail in its desired effect, it is one of the best preparatives to the adoption of the digitalis.

"To prevent any improper influence, which the above recitals of the efficacy of the medicine may have upon the minds of the younger part of my readers, in raising their expectation to oo high a pitch, I beg leave to deduce a few inferences, which I apprehend the facts will fairly support.

" 1. That the digitalis will not universally act as a diuretic.

" 2. That it does so more generally than any other medicine.

" 3. That it will often produce this effect after every other probable method has been fruitlessly tried.

" 4. That if this fails, there is but little chance of any other medicine succeeding.

" 5. That in proper doses, and under the management now pointed out, it is mild in its operation, and gives less disturbance to the system, than squill, or almost any other active medicine.

" 6 That when dropsy is attended by palsy, unsound viscera, great debility, or other complication of disease, neither the digitalis, nor any other diuretic can do more than obtain a truce to the urgency of the symptoms; unless by gaining time, it may afford opportunity for other medicines to combat and subdue the original disease.

" 7. That the digitalis may be used with advantage in every species of dropsy, except the encysted.

" 8. That it may be made subservient to the cure of diseases unconnected with dropsy.

" 9. That it has a power over the motion of the heart, to a degree yet unobserved in any other medicine, and that this power may be converted to salutary ends.

" I give to adults from one to three grains of the powder twice a-day. In the reduced state in which physicians generally find dropsical patients, four grains a-day are sufficient. I sometimes give the powder alone; sometimes unite it with aromatics, and sometimes form it into pills with a sufficient quantity of soap or gum-ammoniac.

" If a liquid medicine be preferred, I order a drachm of these dried leaves to be infused for four hours in half a pint of boiling water, adding to the strained liquor an ounce of any spiritous water. One ounce of this infusion given twice a-day, is a medium dose for an adult patient. If the patient be stronger than usual, or the symptoms very urgent, this dose may be given once in eight hours; and, on the contrary, in many instances half an ounce at a time will be quite sufficient. About thirty grains of the powder, or eight ounces of the infusion, may generally be taken before the nausea commences.

"It appears from several of the cases, that when the digitalis is disposed to purge, opium may be joined with it advantageously; and when the bowels are too tardy, jalap may be given at the same time, witout interfering with its diuretic effects; but I have not found benefit from any other adjunct."

Dr Withering on Foxglove.

"An extensive employment of digitalis, during a period of nine years, has enabled me to speak of its properties with some degree of confidence. My early trials of this medicine in pulmonary complaints, were suggested by the opinions of Dr Withering, Dr Darwin, Sir George Baker, and other physicians, on this subject. The effect of foxglove in retarding the velocity of the pulse, as a direct sedative, was too striking to be long overlooked; and when its application to diminish morbid irritation in the vascular system was once pointed out, the consequences of the idea were easily comprehended. If any man had expressed an opinion, a few years ago, that we should discover a medicine capable of reducing the pulse, without danger, from 120 in a minute to 75 or 80, at the will of the practitioner, he would have been ridiculed as a visionary. Such, however, under proper management is the power of digitalis. A full dose of foxglove is merely a relative term. To one patient, half a grain may be a full dose; to another, six or eight grains may be given without producing any sensible effect. The varieties of sensibility and habit can only be ascertained, by beginning with the lowest dose, and increasing it with the most scrupulous case. I have invariably given the powder of the dried leaves, in substance, as the preparation least liable to difference of strength. I have begun the use of the digitalis with impunity, in so many cases, in doses of half a grain, that I take no other precaution than that of joining an equal quantity of opium with it, at first, to lessen the chance of nausea.

" I have frequently ordered digitalis, in doses of half a grain, to be given every four, five, or six hours, according to the urgency of the case, in active hæmorrhagies, even when I was a stranger to the habits of the patient. I have always succeeded in reducing the pulse, and generally in curing the disease; and I have never seen any material inconvenience produced by this practice, a slight nausea being no unfavourable circumstance to the patient. At the same time that I vouch for the safety of this method, it must be observed, that great attention is necessary, on the part of the physician and attendants: the patient's pulse must be examined from hour to hour, and on its first tendency to flag, or even the slightest indications of sickness, the exhibition of the medicine must be suspended.

" After establishing the power of foxglove, in cases of hæmorrhage, arising from increased action, I was encouraged to try it in the first stages of pulmonary consumption. The result of my experience may be told in a few words: it is, that the patient's ultimate recovery is not to be confidently expected, even when the pulse is reduced in velocity, and the symptoms are evidently mitigated, for a time, by the action of the medicine. Many disappointments have taught me not to be elated by one or two instances of success; and I should deceive the public if I presented to them only examples of fortunate practice. I believe that digitalis, properly administered at the beginning of phthisical affections, may suspend the morbid action of the lungs, by which tubercles are formed; that by its continued exhibition after hæmoptysis, it may be possible to procure the cicatrization of the ruptured vessels, and thus to prevent the formation of ulcers; and I am even disposed to hope, that its power of soothing irritation may extend so far, as sometimes to heal ulcerations of the lungs, in the advanced stages of consumption. At present, I dare not suppose that many cases of confirmed consumption will be cured by it. I have found it powerfully assisted, in some instances, by the exhibition of myrrh and the ferrum vitriolatum, at the same time. I have seldom found it necessary to exhibit large doses of the digitalis in this mode of practice. Three or four grains a day have always depressed the pulse sufficiently for any useful purpose; they have brought it to 76 in a minute; and I have met with few persons whose stomachs could bear a larger quantity.

" From what has been said of the sedative power of digitalis, it may be expected to prove highly useful in many cases of active inflammation, particularly in pleurisy and peripneumony, after bleeding has been practised, as far as the patient's strength will permit. We have long wanted a remedy, capable of lowering the pulse, in certain states of these disorders, without increasing evacuation to a dangerous degree. It would, indeed, be extremely rash to decide at present on the various indications which may arise for the exhibition of this remedy, from the general principle of suspending increased action.

" From the evidence which has been produced, I think we may conclude:

" 1. That digitalis is a direct remedy in active hæmorrhage, by its proper action in retarding the velocity of the circulation.

" 2. That the diuretic action of digitalis, though independent of its sedative power, may sometimes take place in conjunction with the latter, and may even co-operate with it, by its effect on the system as an evacuant.

" 3. That in pulmonary consumptions, arising from hæmoptysis, or tubercles, much relief may be obtained from the use of digitalis; and even a cure may now be hoped for, under circumstances which formerly precluded all expectations of recovery.

" 4. That in anasarcous affections of the cellular membrane of the lungs, or in cases where effusion or inflammatory exsudation shall have taken place, digitalis promises to prove an useful medicine.

" 5. That upon the principle of diminishing irritability, digitalis has been very useful in chronic coughs, in spasmodic asthma, and in palpitations of the heart, not depending on simple debility.

" 6. That the hydragogue and diuretic powers of digitalis, although not invariably exerted in consequence of its exhibiion, are sufficient to render a trial of it proper, in most cases of dropsy ; but that it seems to operate most beneficially, when combined with other hydragogues or sudorifics.

" 7. That when digitalis is to be exhibited repeatedly, during the day, and especially if it be thrown in at short intervals, n cases of urgency, the strictest caution is necessary on the part of the physician and the attendants, to prevent the alarmng and even fatal consequences which may arise from administering this powerful medicine incautiously.

" 8. That in simple inflammatory diseases, the use of digitalis may perhaps supersede the necessity of repeated bleeding and purging, and may save the practitioner from much anxiety and embarrassment, which attend the present practice, in such complaints."

Dr Ferriar on Digitalis.

" I have been the less anxious to extend the use of the cold affusion to the phlegmasiæ and hæmorrhagiæ, because a remedy has lately presented itself, that greatly enlarges our power over the numerous diseases which are arranged under these orders : I mean the digitalis purpurea. This medicine may be almost said to be possessed of a charm for allaying inordinate action of the heart and arteries ; and in this point of view, as well as for its efficacy in some kinds of dropsy, particularly hydrothorax, its introduction into medicine is one of the greatest benefits our science has received in modern times. The extraordinary power of the digitalis in the hæmorrhagiæ, and particularly in hæmoptysis, is pretty generally known, and if it were necessary, I could confirm it by some striking examples. Its use in the phlegmasiæ, is, so far as I know, in a great measure new. Digitalis does not, indeed, supersede the use of the lancet in these diseases, but it diminishes the extent to which it is required; and it may be used with safety and success in cases where the lancet can no longer be employed. Under the precautions prescribed by Dr Withering, without the strictest attention to which no practitioner should prescribe this singular and powerful medicine, I have employed the digitalis to a very considerable extent in inflammations of the brain, of the heart, and of the lungs; and have succeeded with it in situations where I should otherwise have despaired. I have also found it an excellent remedy in inflammatory rheumatism, one of the most tedious and intractable of diseases.

" The prognostic which Dr Ferriar gave to the world in 1799, respecting the use of digitalis in inflammatory fevers, and which my experience has confirmed, I have the pleasure to learn, by a recent communication from himself, has been amply justified by his own subsequent experience."

Dr Currie's Med. Reports.

Effects of Purgatives in Chorea. From Dr Hamilton on Purgative Medicines.

" In the course of my practice I have seen above thirty cases of chorea; a greater number than may have fallen to the lot of many to observe. I cannot say, with Sydenham, that I have succeeded in curing all of these. For several of my patients presented themselves while I yet employed tonic and stimulating medicines; when my practice shared the common fate, and met with disappointment. I am afraid I may even sometimes have done harm, by the indiscriminate use of the cold bath,—a remedy not always suited to the exhausted and irritable state of the subjects of chorea.

" I now began to desert a practice in which I had lost confidence, and to consider chorea in a different light from that in which it had been commonly viewed. I conceived that the debility and spasmodic motions, hitherto so much considered, might not be the leading symptoms of the disease, but might depend upon previous and increasing derangement of health, as indicated by irregular appetite, and constipation of the bowels. Under this impression, I resolved to alter my mode of treatment, in order that I might fulfil those indications which the new, and, as I flattered myself, the more correct view of the disease had suggested. If my conjectures were well founded, the first and principal object of practice would be to remove the constipated state of the bowels. The purgatives which I employed in the first instance were of the weaker kind, and inadequate to the object to be obtained. Stronger ones were found to be necessary to move and discharge the indurated and fœtid fæces. I observed the quantity of feculent matter collected to vary in different subjects, and at different periods of the complaint. I could not ascertain this by any previous circumstance. One would think, that the accumulation would be in proportion to the fulness and prominence of the abdomen; but I do not find that this is the case. Perhaps the lengthened duration of the ailment, and the reduced state of the patient, the consequence of this, are attended with the greatest feculent accumulation.

"I have already noticed that chorea consists of two stages: In the first, while the intestines yet retain their sensibility, and before the accumulation of fæces is great, gentle purgatives, repeated as occasion may require, will readily effect a cure, or rather prevent the full formation of the disease. In the confirmed stage, more sedulous attention is necessary. Powerful purgatives must be given in successive doses, in such manner that the latter doses may support the effect of the former, till the movement and expulsion of the accumulated matter are effected, when symptoms of returning health appear. Whoever undertakes the cure of chorea by purgative medicines, must be decided and firm to his purpose. The confidence which he assumes is necessary to carry home to the friends of the patient conviction of ultimate success. Their prejudices will otherwise throw insurmountable obstacles in the way. Half measures, in instances of this kind, will prove unsuccessful; and were it not for perseverance in unloading the alimentary canal, the disease would be prolonged, and would place the patient in danger, and thus bring into discredit a practice which promises certain safety.

" Here, as in all other cases of extreme debility induced by disease, the recovery is at first slow and gradual. A regular appetite for food, a more intelligent eye, and lightened countenance, cheerfulness and playfulness of temper, increasing aptitude for firmer motions, the restoration of articulation, and of the powers of deglutition, a renovation of flesh and strength succeed each other, and being more and more confirmed, are, ere long, followed up by complete recovery. For some time after these salutary changes take place, the state of the bowels must continue an object of attention. An occasional stimulus from purgatives will be requisite to support their regular action, and to restore their healthy tone, the only security against the recurring accumulation of fæces, and of a consequent relapse. About this time also, remedies possessed of tonic and stimulant powers may be used with propriety and effect. I have not felt the necessity of having recourse to medicines of this kind. Under a proper regimen of light and nourishing food, and of exercise in the open air, my patients in general quickly recover their strength. By this treatment, which I have endeavoured to recommend, chorea is speedily cured, generally in ten days or a fortnight from the commencement of the course of purgative medicines.

" If some of the diseases of which I have treated be cured solely by purgative medicines, and if this cure can be effected more or less speedily, in proportion to the length of time that constipation and the changed nature of the feces have subsisted, I am persuaded that the preservation of the regularity of the alvine evacuation will at all times prevent the accession of those diseases. If these expectations be not too sanguine, it is likely that the marasmus and chlorosis, the vomiting of blood, chorea and hysteria, of which I have spoken, will under this management rarely, if ever, appear. It is fitting, therefore, that this observation should be widely spread; that it should be conveyed to mothers and nurses, to superintendants of nurseries, of manufactories and of boarding-schools, and to all instructors and protectors of children and young people; and strongly impressed on their minds, by such of their medical advisers as think with me, who will acknowledge, that to prevent disease is their paramount duty."

Diabetes.

Dr Rollo, in an ingenious treatise on Diabetes, has endeavoured to point out the peculiar derangement of the organs of assimilation, upon which he conceives this disease to depend; and has, in conformity with his view of its pathology, proposed a method of cure, which he affirms to be more successful than any previously adopted. The following conclusions from his work, include the chief facts which he urges in support of his doctrine, and his idea of the proximate cause of diabetes mellitus.

" 1*st*, That the diabetes mellitus is a disease of the stomach, &c. proceeding from some morbid change in the natural powers of digestion and assimilation.

" 2*d*, That the kidneys, and other parts of the system, as the head and skin, are affected secondarily and generally by sympathy, as well as by a peculiar stimulus.

" 3*d*, That the stomach affection consists in an increased action and secretion, with vitiation of the gastric fluid, and probably of too active a state of the lacteal absorbents.

" 4*th*, That the cure of the disease is accomplished by regimen and medicines preventing the formation of sugar, an diminishing the increased action of the stomach.

" *5th*, That confinement, an entire abstinence from ever species of vegetable matter, a diet solely of animal food, wit emetics, hepatised ammonia, and narcotics, comprehend th principal means to be employed.

" *6th*, That the success of the treatment in a great measur establishes the five preceding inferences.

" *7th*, That the saccharine matter of the disease is forme in the stomach, and chiefly from vegetable matter, as has bee shewn by the immediate effects produced by the abstinenc from vegetable matter, and the use of animal food solely.

" *8th*, That ascescency is predominant in diabetic stomachs which continues even some time after the entire abstinenc from vegetable matter, and after the formation of sugar ; and that while such ascescency remains, the disposition to the disease may be supposed to continue.

" *9th*, That the saccharine matter may be removed in thre days, and by avoiding vegetable matter will not be again reproduced ; but we are not yet able to state accurately, when th disease, and the disposition to it, can be finally removed.

" 10*th*, That there are two circumstances to be considere in this disease, which we may separate in the progress of th treatment ; as it has been shewn, that though the formation o sugar was prevented, yet the increased action of the stomac remained ; and maintained the defect of assimilation, whic prevented nutrition. Hence two objects occur in the cure for it is not yet determined, whether the preventing the formation of sugar, by an entire abstinence from vegetable matter and the use of animal food with fats, if properly persevered in might not ultimately comprehend the other, namely, the removal of the morbid action of the stomach.

" 11*th*, That the lungs and skin have no connection wit the production of the disease.

" 12*th*, That the quantity of urine is probably in proportion

the quantity of liquids taken in, and has but little dependence
absorption of fluids from the surface of either the skin or
ıgs.

" 13*th*, That though the disease has been shewn to consist
an increased morbid action of the stomach, and probably too
at a secretion, with vitiation of the gastric fluid, yet the pe-
liar or specific conditions of either, as forming the disease, is
cnowledged to lie in obscurity, and must remain so until the
ysiology of healthful digestion is properly explained and esta-
shed. That in fatal cases of the disease, death is probably
casioned by mere exhaustion, previously to which the diabetes
appears."

Although many serious objections may be urged against
s doctrine, some of which Dr Rollo has very candidly anti-
ated, yet the method of cure, which he had the merit of pro-
sing, has been more successful than any other, often suspend-
the symptoms, but rarely affecting a permanent cure. In
ny cases, from the extreme reluctance with which patients
omit to this regimen, it is not easy to ascertain whether its
lure is to be ascribed to the inveteracy of the distemper, or to
ir want of resolution to persist in such an ungrateful course
a sufficient length of time.

Mr Watt of Glasgow has lately published some interesting
es of diabetes, in which free and repeated bleeding was at-
nded with the best effects; nor was he deterred from having
ourse to this remedy by the feeble state of the pulse, and
ner alarming symptoms of debility. It is worthy of notice,
t the firmness of the coagulum and inflammatory crust be-
ne more apparent, the oftener the patient was bled. This
ctice has not been equally successful with others; but the
vice of Celsus, *anceps auxilium experiri quam nullum*, can
ver be better applied than in a disease of such a hopeless na-
e as diabetes.

Use of Nitrous Acid in Lues Venerea.

The nitrous acid has of late been powerfully recommended in the venereal disease: Numerous well authenticated cases have been adduced by men of high professional character, where it appears to have effected a cure in the most formidable stages of this distemper; and a general spirit of inquiry has been excited to ascertain its real merits. Our present experience, however, does not enable us to establish its character as a substitute for mercury. That it possesses strong antisyphilitic powers is undoubted, but it certainly does not afford equal security with that remedy. Indeed the contradictory experience of physicians, while it represses too sanguine expectation, calls upon us to pause until time has settled the rank which it ought to hold amongst the remedies of the lues venerea. The nitrous acid has succeeded in many very unpromising cases, but in others apparently slight, it has failed. Nor have those peculiar circumstances of constitution or disease, which indicate the propriety of its exhibition, been as yet pointed out.

It must however be allowed, that the nitrous acid is a highly valuable acquisition to our list of syphilitic remedies. It is no attended with any of those disagreeable consequences which s frequently follow the use of mercury; but, on the contrary seems to increase the appetite and improve the general healt of the patient. Dr Beddoes (to whose exertions on this subjec the public are much indebted) observes, " that where the constitution is broken, the habit feeble or scrofulous, the cur should always be attempted by the nitrous acid, in preferenc to any other medicine." It likewise seems in many cases to b conjoined with mercury with great advantage, and in this wa cures have been effected, after each had been tried separately i vain. Dr Rutherford remarks, in his letter to Dr Beddoe that he has " seen an instance or two where the disease was s nveterate, and the constitution so broken, that neither the acid ior mercury were adequate to check the progress of the disease, s trial had been made of both in succession, but without any onspicuous advantage: in these, therefore, nitrous acid has been ısed at the same time with the mercury, and the two together ıave produced a most favourable change in almost every symp- om."

Mr Pearson of the Lock Hospital draws the following conlusions from very extensive experience on this subject.

"The nitric and nitrous acids have removed both the primary nd secondary symptoms of syphilis; and, in some instances, it eems, that the former have not recurred, nor have secondary ymptoms appeared at the period they commonly shew themelves, when the cure has been imperfect. But, as far as my own xperience extends, and that of many respectable friends, who are onnected with large hospitals, a permanent cure has never been ccomplished by these acids, where secondary symptoms have een present.

"The same acids, when exhibited with the utmost care and ttention to many patients labouring under the primary symp- oms of the venereal disease, and where they have agreed perctly well with the stomach, have been, nevertheless, found indequate to the cure of those symptoms. Indeed, the failures hich have occurred both in my own practice, and that of ıany of my surgical friends, have been so numerous, that I do ot think it eligible to rely on the nitrous acid in any one orm of the lues venerea.

"But, while I am obliged thus to detract from the supposed ıerits of the nitrous acid, as an antidote against the lues venea, I would by no means wish to see it exploded as a medicine ltogether useless in that disease.

"Where an impaired state of the constitution renders the inoduction of mercury into the animal system inconvenient, or vidently improper, the nitrous acid will be found capable of straining the progress of the disease, while, at the same time, it will improve the health and strength of the patient. On some occasions, this acid may be given in conjunction with a course of mercurial inunction, and it will be found to support the tone of the stomach, to promote the appetite, to determine powerfully to the kidneys, and to counteract in no considerable degree the effects of mercury on the mouth and fauces.

" The nitrous acid does not, however, as far as my observations extend, assist, or promote the action of mercury in the cure of lues venerea ; so that the surgeon would neither be authorised to diminish the quantity of that mineral, nor to abridge the time usually occupied in completing a course sufficient to give permanent security to the patient."

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